

**THE IMPACT OF CASH TRANSFER PROGRAM ON ENVIRONMENTAL
SERVICES: A CASE STUDY OF DISTRICT DERA GHAZI KHAN**



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CERTIFICATE

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IN THE NAME OF

ALLAH

The Most Beneficent

The Most Merciful

“To Allah belongs whatever is in the heavens and whatever is in the earth. Whether you show what is within yourselves or conceal it, Allah will bring you to account for it. Then He will forgive whom He wills and punish whom He wills, and Allah is over all things competent.”

(Al-Baqarah, 2:284)

***GOLDEN SAYING OF
THE HOLY PROPHET***

(Peace and Blessings of Allah be Upon Him)

“Do not wish to be like anyone except in two cases. (The first is) A person, whom Allah has given wealth and he spends it righteously; (the second is) the one whom Allah has given wisdom (the Holy Qur'an) and he acts according to it and teaches it to others”.

(Al-Hadith)

DEDICATED

TO

MY BELOVED

PARENTS

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Abstract

Cash transfers Programmes are widely evident to achieve various socio-economic development especially in developing countries. In Pakistan, Benazir Income Support Program (BISP) is a targeted cash transfer program to ameliorate the living conditions of masses based on threshold poverty score. The main objective of BISP is to facilitate poor households through cash transfers in order to get their various socio-economic indicators improved. This study aims to investigate the impact of cash transfer program on environmental services in Pakistan among ultra-poor people. To archive this goal, this study uses BISP survey data 2016. The empirical analysis is based on regression discontinuity design. The analysis shows that BISP holders have significantly improved environmental services include dwelling, sanitation and drinking amenities. It is tenable to state that BISP is genuinely ameliorating some indicators of environmental services and is in a fact major cause of those upward ticking households' characteristics.

Chapter 1

Introduction

1.1. Background

An environmental service is environment's capability to provide the value of life and comfort that is, to safeguard that life as we know it exists in a quality form for everyone (pure air & clean and accessible water, fertile soils & forests rich in biodiversity, nutritious & abundant foods, and so on). In other arguments, nature works "provides services" for the care of life and its manners: these services implemented *by* nature are designated as **environmental services** (Safeopedia,2019). The environment in which we live importantly disturbs our health, family, workplace & outdoor plus transport "environments" all attitude risks to health, in a number of ways after the poor quality of air that many people breathe & coupled to dangers correlated *to unsafe water & poor sanitation and hygiene*. It is expected that 24% of global disease burden besides 23% of all deaths can be attributed to environmental factors. About 36% of this weights affects children from 0 to 14 years of age (WHO, 2009).

Around 200 deaths each 100,000 population may be attributed environmental causes in Pakistan (WHO, 2017). According to "World Bank" estimations that Pakistan yearly load of infections because of outside air pollution represents 22,000 untimely adult expiries in addition to 163,432 DALYs (Disability-adjusted Life Years) lost. However, that for inside pollution versions for 40 million cases of intense respirational diseases and 28,000 expiries/year. "WHO Global Health Observatory" evaluations that around 30 expiries per for every 100000 are due to internal air contamination. Whereas nearly 25 expiries per 100000 are due to outside air pollution. Physical situation safe water & clean air, sound workplaces & safe houses, links, plus streets ought to be sans contamination all added to great wellbeing (WHO, 2018).

The cash transfer program makes direct transferred payments to victims of compassionate crises in order to support them in a situation of a shock for employment. There are two kinds of cash transfers: First is Conditional Cash Transfers (CCT). CCT aims to diminish poverty through creating welfare Programmes restricted upon the receiver's activities. The government (or a charity) simply handovers the money to peoples who meet certain criteria. Second is Unconditional Cash Transfer (UCT). Individuals are given cash as an immediate grant without any situations or work conditions. There is no condition to refund cash, and people are capable to consume the cash any way they desire and in conditional cash transfer: the office sets conditions on in what way the money is consumed, for example specifying that it must be utilized to pay for the reproduction of the family home. On the other hand, cash may be given later beneficiaries have met a condition. For example, enlisting kids in school or consuming them inoculated. This sort of possibility is unusual in charitable locations (Humanitarian, 2019).

The United Nations considers all-inclusive access to clean water a fundamental human right, and a basic advance towards improving expectations for everyday comforts around the world. Water-poor networks are commonly financially poor as their inhabitants are caught in a progressing cycle of poverty. Education suffers when sick children miss school. Financial breaks are routinely lost because of the effects of sickness and inefficient procedures of getting water. Youngsters and ladies endure the worst part of these problems. Water is obviously essential for hydration and sustenance creation yet sanitation is a similarly significant, and reciprocal. Absence of legitimate sanitation administration breeds malady as well as deny individuals of their essential human poise (Academies, 2007).

The United Nations and different associations gauge that every individual expects access to at least 20 to 50 liters of water for each day for drinking, sustenance readiness, and individual

cleanliness. The World Health Organization (WHO) and different national offices have drinking water quality gauges that indicate the worthy microbial, substance, and radiological attributes of safe drinking water. Exorbitant amounts of microorganisms or synthetic substances got from human and animal wastes, horticultural spillover, modern synthetic substances, and even regular toxins make some water hazardous to drink and cause water-related maladies.

If water sources are not secured or are out of the blue defiled under any circumstances, the nature of drinking water endures. Tainting can happen at the wellspring of the water both at the surface and in the ground. When the water is in the dispersion framework, there are extra open doors for drinking water to be defiled. If pipes are not effectively shielded from contaminants, the nature of drinking water suffers.

Radiological characteristics of safe drinking water. Inappropriate capacity can likewise bring about risky drinking water. Sustainable water assets are fundamental to human wellbeing, ecological supportability, and monetary flourishing. This basic resource is under hazard, making it dire to convey the spurs related to water, sanitation, and tidiness for masses and water-related biological systems. At present, over 2 billion individuals are influenced by water pressure, which is expanding with population development and the impacts of environmental change. Accomplishing all-inclusive access to drinking water & sanitation, plus cleanliness and guaranteeing that services are securely overseen stay real difficulties, and meeting them are significant to further advancement in wellbeing, education and poverty eradication.

1.2. A Case of Pakistan

Water and sanitation condition of Pakistan. 2.1 billion Individuals lack access to securely achieved drinking water facilities and 4.5 billion People lack safely achieved sanitation facilities (UNICEF, 2017). Water shortage as of now influences 4 out of each 10 individuals (WHO). 80% of wastewater streams once more into the ecosystem without being preserved with or reused (UNESCO, 2017). Around 66% of the world's transboundary waterways do not have a helpful managing system (SIWI). Roughly 75% of all industrialized water withdrawals are utilized for vitality creation (UNESCO, 2014). 16 million people have no choice but to collect unsafe water, Pakistan is among the top 10 countries where people are living without safe drinking water, 84% to 89% water supplied unsafely and 1 out of 3 schools has no drinking water.

Water accessibility per individual in Pakistan today is 1,000 cubic meters, down from 5,600 cubic meters for each individual in 1947, the year that the nation picked up autonomy from Britain. (Dr. Saeed A. Asad and Jo-Ellen Parry, 2017). 25 million people defecate in openly 32 per square km, rank 9th out of top 10 countries Rank 6th out of the top 10 countries in which 2 out of 5 schools are missing the toilet 39000 children age of five die due to diarrhea every year shows environmental poverty in Pakistan. Provinces water and sanitation condition shows in the maps in appendix 1.

Poverty is a multi-layered phenomenon, four types of poverty can be identified income, social, institutional and environmental. More than 50 million people faces income poverty. Many of these families depend on insecure livelihood and majority of them live in rural areas and are employed in agriculture sector. Seasonal incomes puts the families at risk of hunger. Over 75 million people encounter social poverty and don't have access to health, education and shelter.

World Bank shows that Pakistan ranked 134 out of 157 countries on the Human Capital Index (HCI) while India ranked 115, Bangladesh lagged at 106 and Sri Lanka stood at 74. This shows that Pakistan HCI is lower than the average for its region and income group. A country HCI combines the knowledge and skills that people accumulate over their lives, enabling them to realize their potential productive members of society.

Over 55 million people face environmental poverty. A majority of them don't have access to clean water and sanitation facilities. The provision of clean drinking water, adequate sanitation facilities, and personal hygiene are vital for sustainable environmental conditions and human health. Institutional poverty is also very high. It is a source of income inequality and underdevelopment. Weak institutions provide room for politicians and government officials to exploit public resources for their own interests.

Global experience suggests that transfer Programmes have been more sustainable when they are combined with complementary, well-sequenced interventions on the uptake of education, health and nutrition services, and when there is additional livelihood support for the poor. Most countries are moving from direct income transfers to Programmes and interventions that contribute toward breaking poverty traps (The News, 2018).

BISP was launched in 2008 as Government of Pakistan national social safety net program. It is the biggest and most organized social safety protection program. The primary target of the program is to alleviate the money related emergencies to poor families. Its long term targets are to give a minimum income bundle to poor people and ensure them against destitution. BISP has imposed national wide inclusion in all four provinces Punjab, Sindh, KPK, and Balochistan, FATA, ICT, and AJK.

BISP comparison map in appendix 1 shows the geographical spread of active beneficiaries at the regional level. Punjab has the highest share in active beneficiaries (36.2 percent) followed by Sindh (33.7 percent), KPK (20.3 percent) and Baluchistan (4.2 percent). The share of active beneficiaries in AJK is around 1.9 percent of total beneficiaries while GB has only 0.8 percent share. The distribution of beneficiaries across the different regions is according to the share of the population of the region. Punjab is the largest populated region has the highest share in beneficiaries. (*BISP, 2016*)

Completing 10 years of BISP program approximately 5.7 million beneficiaries of the program and Rs124.7 billion yearly spending on this, BISP has increased in the income of beneficiaries. BISP played an important role in education, health services and nutrition outcome for improving the livelihood of BISP beneficiaries from poverty. Around the world, millions of People Lack safe drinking water, sanitation, and hygiene, this thing puts them on risk from any type of diseases, includes ignored tropical ailments, it influences more than 1 billion individuals in 149 nations(WHO, 2015).

1.3. Motivation of the study

The majority of the population in Pakistan has limited access to safe drinking water and sanitation. Government institutions have failed to provide a clean water supply to the people of Pakistan. The people of Pakistan faced a lot of diseases in case of drinking contaminated and infectious water resultantly; many diseases are born among the people due to this unhygienic water. The present study is designed to examine the impact of cash transfer program on environmental services in Pakistan. Availability of underground water reserves makes

unaffordable water mean for most of the household due to the enormous cost of extraction. This research aims to analyze the impact of cash transfer program on the household level characteristics; dwelling, sanitation, and drinking. This aggregate level analysis of cash transfers program would provide an in-depth analysis of various facets of the household. The main issue of the community is the affordability of the safe drinking water, the majority of the population is poor and their major concern is affordability and accessibility of water and sanitation services in the area. Furthermore, it is necessary to explore how much the cash transfer improves the water and sanitation situation is concerned territory.

1.4. Objectives of the study

This study aims to investigate the impact of cash transfers program on environmental services in Pakistan among ultra-poor people. Environmental services include water and sanitation and dwelling.

1.5. Significance of the study

The influence of cash condition grants on the well-being of a person cannot be denied. Broad literature is available in this area but limited work has been done in the context of Pakistan. The proposed study recognizes the importance of this dimension and attempts to analyze the impact of BISP cash transfer on environmental services in Pakistan. All such types things directly relate with SDGs, most importantly Goal 6 on water and sanitation, and this types of study would be helpful to design policies in the area of environment and its impact on living standard.

1.6. Plan of the Study

Chapter (1) is an introductory part of the study while chapter (2) is based on a literature review. Chapter (3) consisted of the methodological framework which entails analytical framework,

conceptual map, data and description, econometric model, estimation technique, variables definition and descriptive statistics of the data for full samples. Chapter (4) Findings and interpretations while the last Chapter (5) is the conclusion and recommendations of the study.

Chapter 2

Review of Literature

Environmental services have remained a theme of the extraordinary discussion by researchers and analysts. A large portion of them has examined the effect of various variables of poor water and sanitation. As the present study stressed the effect of money award by BISP on Environmental services so the given writing presents the proof of those investigations that have demonstrated the effect of money awards Programmes. Broad literature is accessible on a worldwide viewpoint however rare work has been done with regards to Pakistan.

World Health Organization (2014) reported that polluted water and poor sanitation are connected to the transmission of infections, for example, cholera, looseness of the bowels, diarrhea, hepatitis A, typhoid and polio. Rare or missing water and sanitation benefits in health protection services put so far defenseless patients at extra danger of contamination and illness. Poor management of urban, mechanical and farming wastewater implies the drinking-water of a large number of individuals are hazardously dirty or chemically infected. Environment Protection Agency (2011) the polluted water special effects for kids' wellbeing that drinking water sources may contain an assortment of contaminants that are related with an expanded danger of scope of ailments in kids, including intense sicknesses such as gastrointestinal ailment, formative impacts, for example, learning issue, and malignancy.

(Alix-Garcia & Sims, 2013) expressed that cash transfer projects can be in charge of ecological effects, interceded by markets, for example, expanded deforestation. (Gilliland, Sanchirico & Taylor, 2018) investigated that the cash transfer program can increment indigenous creation

levels and have negative significances for native climate assets. While cash transfer programmes can fortify family efficiency income generation, which takes into account variation into higher-return exercises.

Pandey (2006) expressed that our bodies have turned out to be dirty due to current improvement; urbanization and manufactured issues, generally, the result of people improvement. Poor sanitation and sullied drinking water e emergent out of human development and steady genius make certified issues in human prosperity. The vital sources of water pollution are sewage, also, another waste, mechanical wastes, agrarian discharges, and current wastes from substance organizations, fossils fuel plants, and nuclear power plants. Where money offers a remarkable incentive for cash advantages is as an adaptable instrument to improve family welfare and to address issues as per individuals' very own decisions. From a financial hypothesis point of view, family units put cash towards the utilization that furnishes them with the best peripheral utility – which means the biggest additions from expanding the utilization of a decent or administration (Cabot Venton et al., 2015).

Money awards to jobless young people in northern Uganda (equivalent to twice their yearly pay) brought about most beneficiaries expanding their yearly income by at any rate 40% (Blattman, Fiala and Martinez, 2013). Restrictive money moves work stunningly better in managing the main drivers of neediness, for example, training and wellbeing (Baird et al., 2013).

They make a greater issue of water pollution rendering water never again fit for drinking Cultivating and furthermore for maritime life. An imperative wellspring of water contamination is the residential sewage framework, which contaminates well and waterways, which are an

imperative source of drinking water. Sewage is not the core cause of water contamination; mechanical waste is likewise a noteworthy polluter, offering to ascend to tainting with overwhelming metals. Poor sanitation and polluted drinking water are two of the most well-known natural dangers in numerous nations of the world. Insufficient water, sanitation, and cleanliness represent an extensive piece of the weight of ailment and demise in creating nations.

Rani (2014) said that over the portion of the total populace lives in urban zones and the urban populace is expanding by about 2% every year. Fast populace development in urban zones prompts mushrooming of slums, businesses with no proper dumping lavatories for their effluents, insufficient sewerage frameworks, and undesirable pressure on the common assets particularly expanded groundwater contamination. The main problems in all programmes were the lack of habitual behavior from the target population (Cairncross et al, 1996). Health promotion is a non-isolating intercession which supports the agreement of thoughtful and needs effective and successful plans. Health promotion highlights in different programmes like Africa San Conference in Durban (2008), World Water Week in Stockholm (Falkenmark, 2008) and PHASA meeting in Cape Town (2008).

Before social advertising, public drove all out sanitation, and public fitness center methodology, these schools of development promote hygiene behavior through health projects. In Chipinge District of Manicaland Province Zimbabwe after the half-year of health advancement 44% average change. In term of sanitation 55%, people used latrine (Zimbabwe AHEAD, 2008). In South Africa February 2009, 36% behavior of people changes in six months and 76% registered member improve health during weekly health promotion practice. Before the project, 17.8% of people had safe water after project 82% had safe water (August 2009). Safe Sanitation improved by 71% to 100% with the family units. The Global community challenges that numerous persons

do not have safe drinking water and proper sanitation system. But in reality, without awareness in the community, nothing can be achieved. The community health club approach (CHC) prove that by creating awareness in society we can reduce diseases and improve the sanitation system.

Considerably less proof exists with respect to arrangements planned for improving family units' ex-bet chance systems (Albers, gunning and Kinsey, 2007) Gertler, Martinez and Rubio-codina (2012), who show effects of a standard cost program on interests in nonagricultural exercises and normal longer-term utilization levels. We go further by demonstrating the different effect of extra beneficial mediations, and how these effects fluctuate by presentation to exogenous climate stuns. We likewise center around effects after the program has finished, permitting to show advantages of the program after exit. All the more, by and large, the paper identifies with ongoing exploratory proof on the effect of money awards for private company advancement. As a result, an enormous assortment of proof demonstrates that CCT plans have effectively reduced transient neediness and expanded the collection of long haul human capital through higher school enlistment rates and more prominent use of general health services

Thome et al. (2013) estimated families that get money moves and spend the assets locally are a channel through which the money move program can influence the whole neighborhood economy. They demonstrate that on account of Kenya's cash transfer program for family units with vagrants and powerless kids, the program brought about salary benefits for no beneficiary families and expansion in neighborhood agrarian creation. The generation reactions were biggest for no beneficiary family units. There is expanding acknowledgment that the overflows from cash transfer Programmes are not restricted to income and production. Given the limit of cash transfer Programmes to influence neighborhood request and generation levels, it is likewise conceivable that they sway nearby ecological quality and characteristic assets. Alix-Garcia et al.

(2013) demonstrate that the Mexican restrictive cash transfer program PROGRESA expanded neighborhood deforestation levels by expanding the interest for land-serious merchandise, for example, meat and dairy items.

Pagiola et al. (2005) analyzed the principle manners by which installment for environmental services may influence poverty. Truth be told, the PES approach was initially conceptualized and utilized as a component to improve the proficiency of regular asset the board, not as a system for elevating poverty. The PES approach depends on the rule that the individuals who give ecological services ought to be redressed, and the individuals who get the services should pay for their arrangement (Pagiola and Platais 2002).

Ecosystems are critically essential to human social orders for the numerous and differed environment services whereupon life is based. Environments give results of direct an incentive to individuals—nourishment, fiber, and fuel—and a variety of aberrant advantages, including water filtration, atmosphere guideline, supplement cycling, fertilization, bother control, and ailment guideline. Sound environments are especially imperative to the country poor of the creating scene, individuals who regularly live in extremely close association with their characteristic environment. In spite of the central significance of ecosystem services to human prosperity, nonetheless, environments and their constituent merchandise and ventures keep on declining at disturbing rates (Millennium Ecosystem Assessment 2005).Poverty produces a specific culture of the unhealthy environment where parent particularly mothers loose health-seeking behaviors, the longing for life and psychosocial support for them and their children (Lewis 1998; Commission on SDH 2008; UNICEF 2011).

Water is basic for hydration and sustenance generation—yet sanitation is a similarly significant, and integral, utilization of water. Absence of legitimate sanitation service breeds sickness,

however, it can likewise deny individuals of their fundamental human respect. The United Nations and different associations gauge that every individual expects access to at least 20 to 50 liters of water for each day for drinking, nourishment planning, and individual cleanliness. The World Health Organization (WHO) and different national offices have drinking water quality measures that determine the worthy microbial, substance, and radiological attributes of safe drinking water. Pollution can happen at the cause of the water both at the surface and in the ground. When the water is in the supply framework, there are extra open doors for drinking water to be polluted.

If piping is not effectively shielded from contaminants, the nature of drinking water endures. Inappropriate capacity can likewise bring about insecure drinking water. Feasible water assets are basic to human wellbeing, environmental sustainability, and monetary success. This essential asset is under risk, making it critical to deliver the moves identified with water, sanitation, and cleanliness for populaces and water-related environments. At present, more than 2 billion individuals are influenced by water pressure, which will just increment with populace development and the impacts of environmental change. Accomplishing general access to drinking water & sanitation plus cleanliness and guaranteeing that services are securely overseen stay real difficulties, and meeting them are urgent to further advancement in wellbeing, education and poverty elimination.

UNDP (2006) Water shortage influences in excess of 40 percent of individuals on the planet, a disturbing assume that is anticipated to increment with the ascent of worldwide temperatures because of environmental change .in spite of the fact that expansion in the worldwide temperatures as the aftereffect of atmosphere change.2.1 billion individuals have picked up to improved water sanitation since 1990, diminishing supplies of safe drinking water are a

noteworthy issue affecting each mainland. In 2011, 41 nations experienced water stress.10 of which near exhausting their supply of sustainable freshwater and should now depend on elective sources. By 2050 it is anticipated that one out of four individuals will be influenced by repeating water deficiency.

Guaranteeing general access to protected and moderate drinking water for all by 2030. We put resources into the satisfactory foundation, give sanitation offices and support cleanliness 40% of individuals of the worldwide populace influenced by water scarcity 2.6 billion individuals need to access improved drinking water since 1990 yet 663 billion individuals are still without. Consistently roughly 1000 kids pass on because of preventable water and sanitation illnesses .40% of ladies in sub-Saharan Africa, on the whole, go through 40 billion hours a year gathering water 2.4 billion individuals worldwide don't approach fundamental sanitation administrations like toilets 80 percent of wastewater from human exercises is released into conduits with no contamination expulsion.

Garson (2014). A cash injection of as little as US\$12 every month for a devastated family could decide if a kid eats appropriately or goes to class or not. With money exchange Programmes far and wide currently profoundly affecting the lives of destitute individuals, the discussion is less about whether to actualize them than how to do as such. Passing out money as opposed to nourishment or other essential survival supplies to the destitute is a genuinely ongoing wonder that started in a few Latin American nations, including Brazil and Mexico, during the 1990s. In 1998 South Africa additionally presented its own variant — the kid bolster concede. The across the board accomplishment of these projects is currently rousing numerous different nations in Africa and Asia to pursue suite. Exchanging money to the individuals who urgently require it is

demonstrating to have more sensational and dependable impacts than just keeping the wolf from the entryway for the poorest of poor people.

Michelle Adato (1997). Who has explored the effect of money exchanges for a long time, says the thought of money gifts as unsustainable and inefficient has "progressively been defamed. Money gifts are currently being viewed as a major aspect of an extensive advancement system instead of only a wellbeing net." Because of the effect, these stipends are having on human capital, they are adding to economic improvement.

"At the point when youngsters pass up on that window of chance from zero to two years of age in regards to their dietary status or experience late school begins or early drop-out rates, the aggregate impacts have long-haul outcomes on their monetary prosperity into adulthood," said Adato, including that examination has appeared coordinate connection between an absence of early capital interest in kids and continuous cycles of between generational neediness. "This is the most grounded defense for money exchange Programmes — past the fundamental human rights point of view." The test to arrive at the Millennium Development Goal, of splitting the extent of individuals without access to essential sanitation by 2015, is huge. Put just these objectives imply that at any rate, 1.47 billion additional individuals will need services. Even though most of the unserved are in Asia, steadier advancement is being made in most Asian nations than somewhere else.

Numerous nations in Africa and different parts of the emerging world will battle to meet numerical targets that appear to be practically impossible. In any event, it implies the current rate of sanitation arrangement in Africa must expend. Fruitful promoting perceives that families looking to tackle their own sanitation issues are customers, similar to any others, who settle on their own choices and decisions about how they bring up their youngsters, spend their cash, just

as where they excrete. What's more, similar to consumers wherever they will have various inclinations, assets, qualities, needs, and conditions. While the United Nations Joint Monitoring Program (JMP) does not identify shared sanitation as "improved sanitation", as a result of the expanded health dangers of shared sanitation (WHO/UNICEF, 2014) in slums, shared sanitation services particularly shared toilets are the most predominant type of sanitation (Nakagiri et al., 2016, Günther et al., 2012, Nuwagaba, 2006).

Sanitation arrangement in urban zones of Sub Saharan Africa (SSA) is mostly on location (Banerjee, S. G., and Morella, E. 2011). In Kampala city shared toilets are the significant sanitation choice. The utilization of shared latrines is exacerbated by being difficult to reach, flooding during the wet season; being locked, abused, lacking cleaning and upkeep (Isunju et al., 2011, Kwiringira et al., 2014, Kwiringira et al., 2014, Kwiringira et al., 2016). Thusly, the state, use, and the board of shared sanitation services remain a basic segment of the sanitation grid in Kampala city (Nakagiri et al., 2016). The point of the paper is to display the client hindrances to shared sanitation cleaning and support in the ghettos of Kampala with the target of underlining that, the insignificant nearness of a sanitation capacity does not mean access to sufficient sanitation. Insights demonstrate that the extent of shared sanitation is most noteworthy in SSA with about 20% utilizing shared sanitation facilities (WHO/UNICEF, 2014).

Upgrades in family budgetary assets achieved by social help can, on a basic level, increment youngsters' prosperity through better sustenance, sanitation, and medicinal services (Case 2000; Case, Lubotsky, and Paxson 2002). Employments activities engage networks not exclusively to recoup from compassionate emergencies yet additionally to plan, oppose and beat stuns with their methods, expanding their versatility. Indeed, even with critical advancement made by various compassionate on-screen characters, understanding employments methodologies and

structuring Programmes to help them is as yet a moderately new methodology. Vocational training can likewise be critical to calamity influenced individuals at various phases of their lives following a debacle or struggle occasion. Following a calamity or in circumstances of serious incessant needs, help Programmes plan to address quick issues and decrease enduring and spare lives and occupations. Here, livelihood Programmes can likewise incorporate help to ensure family unit and community resources for avoiding further harm to the lives of the individuals included.

Cash transfer is being utilized in mediations whose essential goal is to empower the help and recuperation of occupations. For instance, as opposed to legitimately dispersing sewing machines, angling vessels or domesticated animals, family units can be given money to buy the suitable work inputs or to make ventures towards their very own employment needs. In seed fairs, otherwise called voucher fairs, vouchers are given to recipients who then 'buy' seeds from neighborhood brokers who sell seeds and instruments at the reasonable. While this action confines the extent of buys to seeds and devices, it commonly furnishes recipients with more decision than in-kind seed dissemination.

2.1 Concluding Remarks on Literature

The impact of conditional and unconditional cash grants on the prosperity of an individual can't be denied. The proposed research perceives the significance of this measurement and endeavors to break down the effect of BISP money move on environmental services in Pakistan. Because of uncertain discoveries of the job of BISP and ecological administrations, there is a need to further investigate the issue. Such investigation may deal with these weaknesses by making amassed and disaggregated analysis and by utilizing regression discontinuity design (RDD).

Chapter 3

Methodology

3.1: Theoretical Framework

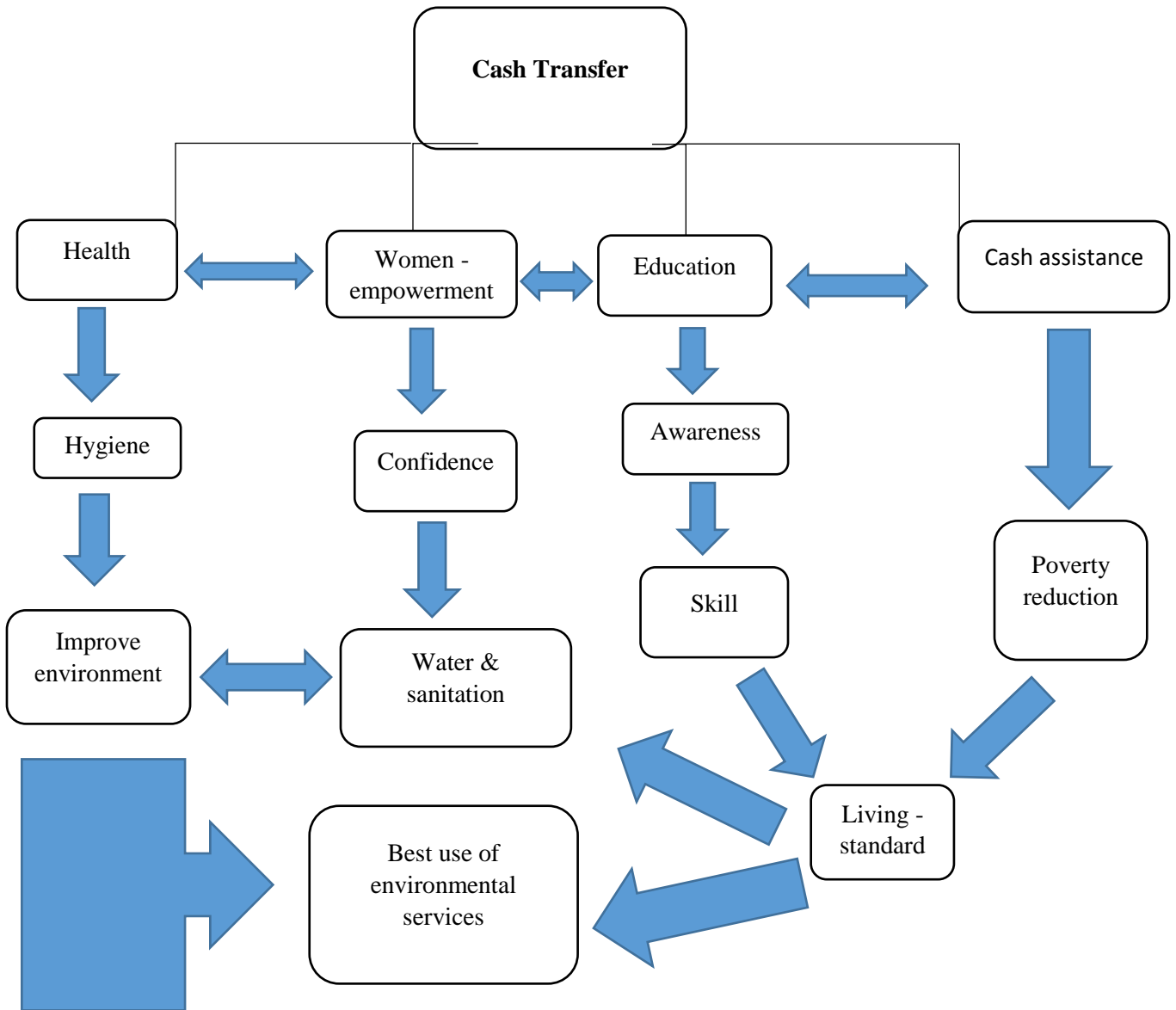
The theory of consumer choice provides the basis for the impact of the cash transfer program. According to this theory, the consumer fully knows their own preferences, allowing for a simple comparison of two goods. The impact of cash transfer intervention on economic and social decision making is established through in the behavior of households, communities and local economies. Behavioral changes in household occur through improvements in human capital, participation in income-generating strategies, risk management, social networking, local economy, and women empowerment. Impact of handovers at a public level can raise development by decreasing criminality (Mehlum, et al 2005).

Such pathways from pay through the lodging to wellbeing are materialistic, in that salary is thought to be a determinant of individuals' presentation to situations that can do straightforwardly influencing their wellbeing for better or in negative ways. Higher wages additionally give an asset to adapting to sick wellbeing by empowering individuals to adjust their home surroundings in manners that may slow or even switch the movement of medical issues (Herd et al., 2007). Neo-material hypothesis – emerging out of the discussion about the purposes behind the association between national-level salary imbalance and wellbeing – features that chronicled and contemporary government approaches and social practices may influence the material and social living states of individuals over the existing course and in this way their wellbeing (Lynch et al., 2000). Cash Assistance (CA) in Arizona's Temporary Assistance for Needy Families (TANF) program, enables families to pay for nourishment and other

fundamental needs while helping with occupation preparing and discovering work.

These are four channels of the cash transfer program, income flow, women empowerment, education, and health. All these four channels linked with each other, Ladies' monetary strengthening alludes to the capacity for ladies to make the most of their entitlement to control and profit by the assets, resources, pay and their own time, just as the capacity to oversee hazard and improve their financial status and prosperity. Cash assistance given to poor families to improve their wellbeing. Learning is the way toward encouraging learning, or the securing of information, abilities, qualities, convictions, and propensities. Wellbeing is a condition of complete physical, mental and social prosperity and not simply the nonattendance of malady or sickness. All these channels push to improve living standard to full fill the best use of environmental services.

3.2: Analytical Framework



3.2: Data and its Description

BISP conducted three evaluation reports in different era, first evaluation report baseline survey was publish in 2014 than second report first impact evaluation was publish in 2015. And third evaluation report was published in 2016 as second evaluation report. Using data from BISP survey 2016 because it is latest data of BISP in Pakistan till to date that includes the beneficiaries and non-beneficiaries, BISP data is targeting on the base of NSER data (National Socio-Economic Registry). NSER is census-type data of households almost covering 80% of the population.

3.3: Estimation Technique

Although BISP accepting is not unplanned, his execution remained intended to take into consideration causal distinguishing proof of its belongings. The “Proxy Means Test” (PMT) was used as a cutoff for the BISP specially to be able to use Regression Discontinuity Design (RDD) as an assessment approach. Under “RDD” slightly unqualified families units fill in as a contrast bunch for hardly qualified families (above and below the PMT cut-off of 16.17). Be that as it may, the brokenness isn't sharp, implying that a few family units underneath the limit don't get transfers, and a few families simply over the edge do get transfers. So we utilize fuzzy RDD configuration to quantify effects of the BISP transfer, which we concisely describe beneath.

3.5: Limitations of the regression discontinuity design

On the other hand, the sharp RDD features two main limitations. Firstly, its feasibility is by definition confined to those instances in which selection takes place only on observable pre-intervention variables; as a matter of fact, this is not often the case. Secondly, even when such a design applies, it only permits to identify the mean impact of the intervention at the threshold for

selection. In the realistic situation of heterogeneous impacts across units, this local effect might be very different from the effect for units away from the threshold for selection. To identify the mean impact on a broader population one can only resort to a non-experimental estimator, whose consistency for the intended impact intrinsically depends on behavioral (and not testable!) assumptions.

3.4: Regression Discontinuity Design

Regression Discontinuity Design (RDD) was first presented by Thistle-Waite & Campbell (1960) then a brilliant survey of “RDD” in financial matters can be establish in Lee & Lemieux (2010). Resulting Lee & Lemieux's Interpretation, considers variable ‘X’ that is utilized to decide platform contribution. Interpretations by an estimation $X \geq c$, where c is the limit qualified for the program. However people with $X < c$ are not qualified. Researcher can thusly characterize a dummy variable for treatment with the end goal that $D = 1$ if X greater than and equals to c and $D = 0$ if X less than c . Now, consider a result ‘Y’ that the program overhead could influence. Before the program contribution, here is not any motivation to suppose that the connection among “Y & X” would be discontinuous at the worth $X = c$. Whereas Y is nonstop above the scope of ‘X’ Close $X = c$, one can reflect the normal action impact at c as:

$$\tau = \lim_{X \downarrow c} E[Y_i | X_i = x] - \lim_{X \uparrow c} E[Y_i | X_i = x] \quad (a)$$

Where "i" guides people.

Even though the normal treatment impact evaluated utilizing “RDD” is constricted for it is resident, as Lee & Lemieux (2010) argument out this structure remains likened near a restricted casual trial. Assumed that the action task ‘D’ stands characterized exclusively dependent on a particular estimation of ‘X’. It is to some degree minor supposition that undetectable is not

identified with 'D', accordingly the estimation of τ is impartial by strategy. More one can test whether different factors that ought to not be influenced by the treatment are without a doubt nonstop in 'X' by the edge as one would suppose. Lastly as in a randomized examination, it isn't important near likewise controller for any other baseline covariates 'W' in a linear regression structure. However one can include covariates to the regression to endeavor to clarify a portion of the difference in the dependent var.

The RDD disclosed this argument is a harsh "RDD" implying that the likelihood that somebody gets package is One if the var 'X' is beneath 'c' and Zero if the distinct has an estimation of "X" above 'c'. In situation of "Pakistan BISP" the imposing var 'X' is the "PMT" & the limit c is 16.17. However, a few families below the edge get moves and some above the limit gets them. As far as "RDD", we can call this rate defective submission near the imposing regulation. Trochim (1984) named this result as a (fuzzy) RDD plus indicated that all that is essential to prove effects at the limit is that

$$\lim_{x \downarrow c} E[D = 1 | X = x] \neq \lim_{x \uparrow c} E[D = 1 | X = x] \quad (b)$$

Meanwhile the possibility of action at the limit 'c' never again increments from 0 to 1, the hurdle in the correlation among Y & X cannot be translated equally a resident normal action impact. But, the treatment impact container be assessed as in a helpful factors structure. Hypothetically, to acquire the residential normal action impact one can partition the hurdle in the link among 'Y' & 'X' at 'c' by the jump in the likelihood of treatment at 'c':

$$\tau_F = \lim_{x \downarrow c} E(Y | X = x) - \lim_{x \uparrow c} E(Y | X = x) \setminus \lim_{x \downarrow c} E(D | X = x) - \lim_{x \uparrow c} E(D | X = x) \quad (c)$$

Wherever another time following Lee & Lemieux (2010), the ‘F’ subscript means "Fuzzy". Imbens & Angrist (1994) proved proportion be able to exist translated as a causative impact if researcher accept monotonicity plus excludability. Monotonicity suggests when ‘X’ crosses the edge value ‘c’, it doesn't likewise make a few observation take up the action and others to discard it. Excludability infers that overpass the threshold cannot influence result ‘Y’ to expect from over the effect on the receiving of treatment.

To evaluate equation (c), researcher expect that can compose the likelihood of treatment as:

$$\Pr(D_i = 1 | X_i = x) = \gamma + \delta T_i + g(x - c) \quad (d)$$

Where $T_i = 1(X_i \geq c)$ shows whether the pushing variable surpasses the threshold & $g(\cdot)$ Is a utility of the distance from the threshold ‘ δ ’ denotes to rise in the possibility of action at the threshold. Hypothetically write that $D_i = \Pr(D_i = 1 | X_i = x) + \omega_i$, where ω_i stands a disorder term independent of X_i , and after that, future describe the “fuzzy RDD” with 2 -equations.

$$Y_i = \alpha + \tau D_i + (X_i - c) + \epsilon_i \quad (e)$$

$$D_i = \gamma + \delta T_i + g(X_i - c) + \omega_i \quad (f)$$

Estimation of equations (e) and (f) can be executed with residential linear regression and 2 phases least squares (2SLS). A significant optimal in “RDD” inquiry is choosing values of the seriatim variable which are utilized to bearing assessment called bandwidth. Although the assessments remain impartial in the limit of a threshold one essential utilize records to really estimation the action impact τ utilizing information, which infers that as records beyond away from the threshold is used in estimate, assessment for τ become more vulnerable to bias, as interpretations On Both Lateral of the threshold become fewer and fewer similar as

records are included. Then again, incorporation of additional data on either side of the limit takes into account progressively exact assessments.

To select a bandwidth for estimate then one essential equilibrium. The unfairness of counting extra remarks touching the variance of action effect estimations. An additional difficulty in “fuzzy” RDD is whether to emphasis on the favoritism variance swap in equation (e) or equation (f) Imbens & Lemieux (2008) recommend converging on the result equation (e) for choosing the bandwidth then using the similar bandwidth for the action equation (f). No test the compassion of outcomes to other bandwidths in assessment, usage techniques established by Calonico, Cattaneo, and Titiunik (2014a, 2014b) to regulate the optimum bandwidth.

Estimators utilizes domestic linear regression on both side of the threshold plus incorporates piece of information-driven preference corrected assurance break assessment. The estimator utilizes three-sided part for information incorporated into regression, as additionally recommended by Lee and Lemieux (2010).in results give two arrangements of appraisals to every result. To start with, we give evaluations utilizing equation (e) and (f) as written in a domestic regression framework. But, these assessments overlook accessible data on mutually standard covariates and the pattern estimation of the result variable. Although around is no hypothetical need to incorporate also for impartial evaluations, as talked about above including such factors canister diminish the change of assessments and improve exactness; besides, they exploit the board idea of the information.

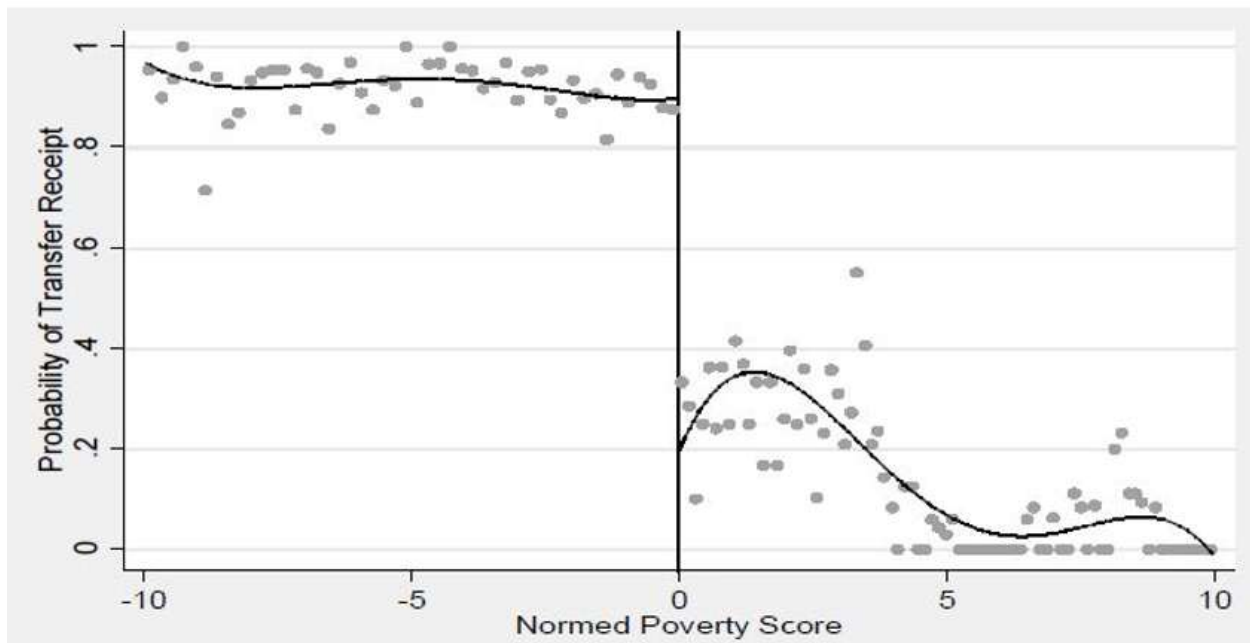
3.6: Descriptive statistics

This section deals with description of data. As already mentioned that survey data is being used and there may be existence of predilection in data due to nature of data. In the following table we

have tabulated mean of all indicators of three variables that explain environmental services. In appendix 2 gives the general trend of various indicators, Figure “A1” and A2 shows the trend of dwelling, figure “B” shows the trend of water uses and in figure “C” shows the trend of sanitation of household. Figure1 shows probability of BISP transfers on normalized poverty score and figure 2 shows the histogram.

<i>Dwelling Type</i>	Independent house/compound	Apartment/flat	Part of large unit	Owner Occupied (Not self-hired)	Owner Occupied (Self-hired)	on rent	Subsidized rent	Rent free.	Electricity
Mean	0.76	0.07	0.20	0.70	0.12	0.06	0.00	0.09	0.61
<i>Sanitation</i>	Flush connected with public sewerage	Flush connected with pit	Flush connected with open drain	Dry raised latrines	Dry pit latrines	Not toilet			
Mean	0.14	0.33	0.13	0.07	0.10	0.19			
<i>Water sources</i>	Piped water	Hand pump	Motorized pumping/tube well	Open well	Closed well	Pond	Canal/river/stream	spring	
Mean	0.15	0.44	0.25	0.03	0.01	0.00	0.02	0.04	

Figure 1: Probability of BISP cash transfer OPM report 2016



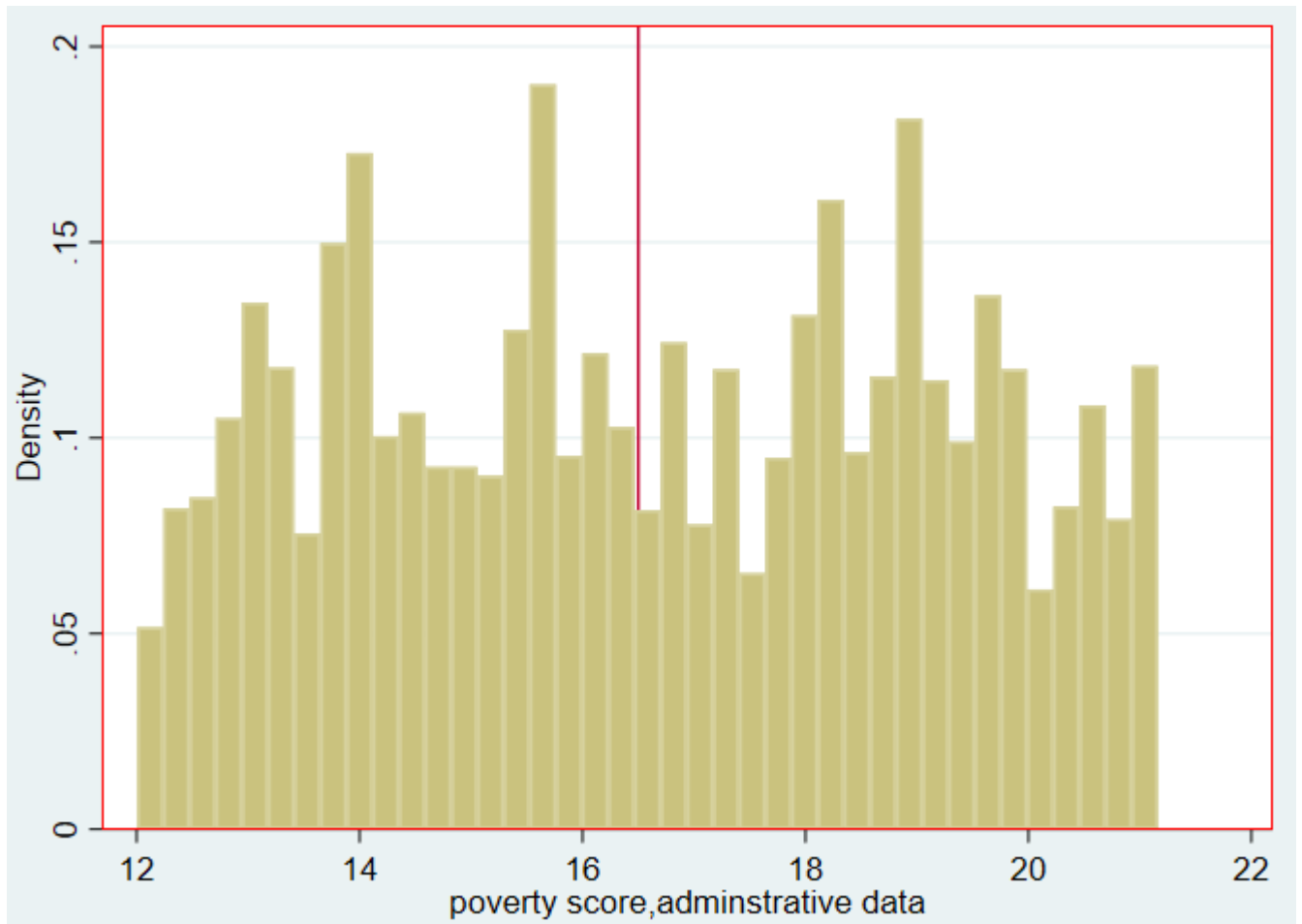
Given the hypothetical argument, inside the estimate section. Our first objective is to demonstrate that here is a discontinuous barrier in the likelihood of exchange delivery at PMT edge of 16.17. On the off chance that no such evident bounce exists, at that point, the destitution score is commonly not a legitimate constraining variable. In the first place, we outwardly look at the intermittence among the example of a family unit in the section. Visually examined the break in figure '2' by intrigue the chance of exchange receiving on the y-axis and the PMT on the x-axis with the chance of exchange receiving estimated authoritatively. Diagram shows normal "BISP" recipient rank with bins of 0.2 points of the "PMT" score. The information is suitable with fourth-order polynomial evaluated independently on also side of the fitness cut off. Graph illustrates the smooth & flat link among the likelihood of getting installment plus the poverty

score on the left side of the diagram. On the limit, the likelihood of accepting exchanges at the edge among qualified family is over 80 %. Watch genuinely significant level family units accepting exchanges simply over the limit (around 25 percent), yet likelihood rapidly droplets off as the destitution score increments. This result is predictable by the platform guidelines, which grant moves to specific sessions of family units with neediness score above 16.17, yet through a destitution score of 21.17, no family ought to get moves. The probabilities of getting moves produced from authoritative information are generally constituent with these guidelines. Future, this break ought to be enormous enough to recognize the effect of the exchanges.

Graphical visualization of variables related to environmental services are given in appendix 2 and comprises three dimensions of households. In this research examined specifically in figure (A1), consider part of large unit, independent house, part of compound and apartment or flat. In all four cases, there is substantial shift in in concerned indicators as evident in tables. And in figure (A2). Specifically, examined whether household have thatching, mud floor in the house and electricity whether or not the households has number of rooms in the house. We again fined reasonable example in the information, in term of negative relationship among a mud floor, and thatched roof versus the destitution score plus no proof of basic disruption at the limit for any of the 4 variable. In figure (B). Specifically examined whether household have motorized pumping, hand pump and pond, whether or not the household has not the open well. Again locate a reasonable example in the information, in term of negative connection between open well against the poverty score, and no proof of the structural break at the edge for any of the 4 variable. In figure(C). Examined whether or not household owned flush associated with pit, flush associated with the open channel, flush associated with open sewerage and no can. Again discover reasonable examples in the information, in term of a negative relationship between no latrine and

covered thatched against the poverty score and no proof of a basic breakdown at the edge for any of the 4 factors.

Figure 2: Histogram



In this histogram shows of “administrative poverty scores”, in 50 bins, for a family unit through poverty scores among in the range of 12 and 21(or dual the limit figure 3). If there existed control of the dependent var. Researcher would hope to watch a grouping of the information unbiased beneath the edge, or greater thickness in the histogram impartial underneath the limit. We may expect then a simultaneous drop in the likelihood simply over the limit. Whereas the

histogram ensures not give off an impression of being smooth and neither fixes it propose such a break the absence of levelness might be the outcome of some degree non-standard sampling methodology that was fallowed to build up the sample.

3.7: Econometric Model

To measures the effectiveness of the cash allocation program on environmental services, the Regression Discontinuity Design (RDD) has been used. The core advantage of RDD is that it removes selection bias by making use of the discontinuity in the eligibility criterion around the program eligibility threshold.

$$Y_i = \beta_0 + \beta_1 D_i + \sum \beta_i Z_i + \mu_i$$

Where Y_i is environmental services, D_i is dummy variable where as it takes the value of 1 and 0. If family i is BISP beneficiary then D_i is equal to 1 otherwise 0. Z_i is a vector of control variables, and μ_i is an error term. The β_1 measures the impact of the program, and $\sum \beta_i Z_i$ measures the impact of control variables.

3.8: Hypotheses

Hypothesis 1

H₀: Cash transfer program has positive impact on the availability of clean water

Hypothesis 2

H₀: Cash transfer program has positive impact on the acquisition of improved sanitation

Hypothesis 3

Ho: Cash transfer program has positive impact on the attainment of safe dwelling

3.8: Definitions of Variables

This section comprises definition of variables which include environmental services that further entails three dimensions of household.

3.8.1: Environmental Services

Environmental services is a functional unit of a health care facility. It has the responsibility for laundry, liquid and solid waste control, safe disposal of materials contaminated by radiation or pathogenic organisms, and general maintenance of safety and housekeeping. In other words, physical condition safe water and clean air, sound work environments, safe houses, networks and streets all add to great wellbeing. Environmental services captured by these three variables;

- a) Dwelling b) Water (c) Sanitation

3.8.2: Dwelling

A dwelling is a self-contained unit of accommodation used by one or more households as a home, such as a house, apartment, mobile homes, houseboat, vehicle or other substantial structure.

3.8.3: Water

Water is a transparent, unscented, and almost vapid compound substance, which is the primary constituent of Earth's streams, lakes, and seas, and the liquids of most living life forms. It is fundamental for every single known type of life, even though it gives no calories or natural supplements.

3.8.4: Sanitation

Sanitation suggests general prosperity conditions related to clean drinking water and palatable treatment and move of human excreta and sewage. A sanitation system incorporates the catch, stockpiling, transport, treatment, and transfer or reuse of human excreta and wastewater.

Further all these variables of environmental services captured by different indicators in the questionnaire of survey 2016 shown in appendix 1.

Chapter 4

FINDINGS AND INTERPRETATION

4.1 Introduction

After selecting the appropriate detail of the model and clarifying the approach in detail in the previous chapter, now estimated the impact of cash transfer program on environmental services by using Regression Discontinuity Design (RDD). Estimated into three parts (1) water (2) dwelling (3) sanitation. Each part have own characteristics. In first sections of tables 4.2,4.3 and 4.4 covers all Pakistan as *aggregated analysis* while the second section of tables 4.2(i), (ii) and (iii), (iv) and 4.3(i),(ii) and (iii),(iv) and 4.4(i),(ii),(iii) and (iv) covers the provinces of Pakistan as *disaggregated analysis*. And third section of tables 4.5(ii), (iii) and (iv) covers analysis of district Dera Ghazi Khan.

Section 4.1: Aggregated analysis of water using BISP survey 2016

	Hand pump	Pond	Canal/river/stream	Spring	Piped water	Open well	Closed well	Tube well/motorized pumping
Fixed bandwidth=5								
RDD estimates	0.083*	0.085	0.014	0.009	0.092**	0.069	0.003	0.059**
P –values robust	0.051	0.237	0.276	0.680	0.005	0.232	0.781	0.043
Sample size left of the cut off	6381	6381	6381	6381	6381	6381	6381	6381
Sample size right of the cut off	5011	5011	5011	5011	5011	5011	5011	5011
Optimal bandwidth								
RDD estimate	0.026	0.077	0.001	0.003	0.103*	0.039	0.001	0.001
P values robust	0.231	0.518	0.852	0.892	0.081	0.539	0.938	0.932
Bandwidth below the cut off	4.602	3.450	4.753	3.395	5.029	4.516	4.184	3.203
Bandwidth above the cut off	7.698	6.279	7.829	6.179	7.361	7.986	7.104	6.815
Sample size left of the cut off	5826	6681	6281	6381	6806	6181	6581	5800
Sample size right of the cut off	6103	5311	5211	5411	5405	4801	5211	5992
Sample mean	5.215	4.699	3.628	5.095	4.279	3.627	3.737	6.182

1 % significance indicated by ***, 5% by ** and 10% by *

As we hypothesised in chapter 3, it is now become vivid that Preceding table shows the impact of cash transfers programme on acquisitions of various water resources. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better water resources. BISP beneficiaries' analysis depicts the substantial sway towards more safe water resources as compared to water resources with greater health risks. So greater the amount and scope of cash transfer programme, greater will be the shift towards the safer water acquisitions like hand pump, tube well / motorized pumping and piped water while all other water sources as mentioned in above table are insignificant and have no plausibility.

4.2(i): Provincial analysis of water resources using BISP survey 2016

Punjab	Hand pump	Pond	Canal/river/stream	Spring	Piped water	Open well	Closed well	Tube well/motorized pumping
Fixed bandwidth=5								
RDD estimates	0.062**	0.079	0.035	0.027	0.01**	0.072	0.001	0.047**
P –values robust	0.049	0.251	0.192	0.259	0.019	0.314	0.537	0.029
Sample size left of the cut off	1375	1357	1357	1357	1375	1357	1357	1375
Sample size right of the cut off	857	857	857	857	857	857	857	857
Optimal bandwidth								
RDD estimate	0.031	0.091	0.091	0.001	0.175*	0.037	0.003	0.091
P values robust	0.321	0.218	0.730	0.441	0.061	0.614	0.593	0.715
Bandwidth below the cut off	4.430	4.450	3.952	3.954	4.353	3.516	3.184	3.203
Bandwidth above the cut off	7.598	7.279	7.756	7.763	6.351	6.986	7.104	6.815
Sample size left of the cut off	2067	2380	2265	2367	2167	2187	2076	2134
Sample size right of the cut off	1867	2094	1867	1734	1986	1754	1789	2098
Sample mean	2.318	2.531	2.911	2.091	1.385	2.301	1.853	2.295

1 % significance indicated by ***, 5% by ** and 10% by *

As we hypothesised in chapter 3, it is now become vivid that Preceding table shows the impact of cash transfers programme on acquisitions of various water resources in Punjab. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better water resources. BISP beneficiaries' analysis depicts the substantial sway towards more safe water resources as compared to water resources with greater health risks. So greater the amount and scope of cash transfer programme, greater will be the shift towards the safer water acquisitions like tube hand pump, well / motorized pumping and piped water while all other water sources as mentioned in above table are insignificant and have no plausibility.

4.2(ii): *Provincial analysis of water resources using BISP survey 2016*

KPK	Hand pump	Pond	Canal/river/stream	Spring	Piped water	Open well	Closed well	Tube well/motorized pumping
Fixed bandwidth=5								
RDD estimates	0.0413	0.057	0.017	0.003	0.079*	0.050	0.050	0.013**
P –values robust	0.081	0.137	0.256	0.650	0.053	0.212	0.212	0.047
Sample size left of the cut off	796	796	796	796	796	796	796	796
Sample size right of the cut off	467	467	467	467	467	467	467	467
Optimal bandwidth								
RDD estimate	0.061	0.061	0.042	0.007	0.091	0.083	0.083	0.037
P values robust	0.231	0.518	0.352	0.512	0.357	0.293	0.293	0.138
Bandwidth below the cut off	3.275	3.450	3.920	3.395	4.025	4.142	4.142	3.186
Bandwidth above the cut off	7.698	7.279	7.529	6.311	7.762	7.194	7.194	6.142
Sample size left of the cut off	1178	1178	1178	1178	1178	1178	1178	1178
Sample size right of the cut off	658	658	658	658	658	658	658	658
Sample mean	0.911	1.032	1.001	0.897	1.195	1.327	1.327	1.182

1 % significance indicated by ***, 5% by ** and 10% by *

As we hypothesised in chapter 3, it is now become vivid that Preceding table shows the impact of cash transfers programme on acquisitions of various water resources in KPK. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better water resources. BISP beneficiaries' analysis depicts the substantial sway towards more safe water resources as compared to water resources with greater health risks. So greater the amount and scope of cash transfer programme, greater will be the shift towards the safer water

acquisitions like tube well / motorized pumping and piped water while all other water sources as mentioned in above table are insignificant and have no plausibility.

4.2(iii): Provincial analysis of water resources using BISP survey 2016

Sindh	Hand pump	Pond	Canal/river /stream	Spring	Piped water	Open well	Closed well	Tube well/ motorized pumping
RDD estimates	0.051**	0.083	0.019	0.002	0.073	0.076	0.001	0.039**
P –values robust	0.043	0.184	0.213	0.472	0.212	0.363	0.582	0.037
Sample size left of the cut off	1269	1269	1269	1269	1269	1269	1269	1269
Sample size right of the cut off	942	942	942	942	942	942	942	942
Optimal bandwidth								
RDD estimate	0.063	0.092	0.023	0.005	0.096	0.054	0.009	0.004
P values robust	0.095	0.752	0.962	0.698	0.682	0.965	0.458	0.149
Bandwidth below the cut off	4.729	4.694	4.125	3.290	3.902	3.256	4.190	3.386
Bandwidth above the cut off	7.342	7.547	7.890	6.310	6.168	6.726	7.513	7.426
Sample size left of the cut off	1469	1469	1469	1469	1469	1469	1469	1469
Sample size right of the cut off	890	890	890	890	890	890	890	890
Sample mean	1.465	1.732	1.428	1.482	1.586	1.683	1.582	1.724

1 % significance indicated by ***, 5% by ** and 10% by *

As we hypothesises in chapter 3, it is now become vivid that Preceding table shows the impact of cash transfers programme on acquisitions of various water resources Sindh. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better water resources. BISP beneficiaries’ analysis depicts the substantial sway towards more safe water resources as compared to water resources with greater health risks. So greater the amount and scope of cash transfer programme, greater will be the shift towards the safer water acquisitions

like hand pump and tube well / motorized pumping while all other water sources as mentioned in above table are insignificant and have no plausibility.

4.2(iv): Provincial Analysis of water resources using BISP survey 2016

Balochistan								
Fixed bandwidth=5								
RDD estimates	0.015	0.023	0.010	0.001	0.039	0.062	0.002	0.022
P –values robust	0.152	0.125	0.167	0.465	0.095	0.080	0.117	0.083
Sample size left of the cut off	297	297	297	297	297	297	297	297
Sample size right of the cut off	132	132	132	132	132	132	132	132
Optimal bandwidth								
RDD estimate	0.030	0.027	0.031	0.003	0.053	0.081	0.007	0.041
P values robust	0.117	0.149	0.199	0.210	0.081	0.107	0.231	0.099
Bandwidth below the cut off	3.968	3.908	3.752	3.905	4.010	3.127	4.001	3.580
Bandwidth above the cut off	6.963	7.283	6.182	7.258	7.962	7.205	7.389	7.289
Sample size left of the cut off	314	314	314	314	314	314	314	314
Sample size right of the cut off	157	157	157	157	157	157	157	157
Sample mean	0.472	0.274	0.386	0.118	0.426	0.311	0.253	0.428

1 % significance indicated by ***, 5% by ** and 10% by *

As we hypotheses in chapter 3, it is now become vivid that Preceding table shows the impact of cash transfers programme on acquisitions of various water resources in Balochistan. It is evident from the empirical outcome that cash transfers has significant influence on the attainment of

better water resources. BISP beneficiaries' analysis at provincial level in Balochistan depicts the inconsequential sway towards more safe water resources. So to get substantial shift towards safe water acquisitions like hand pump, tube well / motorized pumping and piped water it is necessary to winnow the impediments factors.

Section 4.3: Aggregated Analysis of sanitation using BISP survey 2016

	Flush with public sewerage	Flush with pit	Dry raised latrines	Dry pit latrines	No toilet	Flush with open drain
Fixed bandwidth=5						
RDD estimates	0.082	0.197**	0.119	0.144	-0.003	0.254**
P –values robust	0.257	0.050	0.447	0.301	0.092	0.047
Sample size left of the cut off	2607	2607	2607	2607	2607	2607
Sample size right of the cut off	1908	1908	1908	1908	1908	1908
Optimal bandwidth						
RDD estimate	0.109	0.137	0.092	0.095	-0.072	0.279*
P values robust	0.439	0.133	0.287	0.235	0.083	0.074
Bandwidth below the cut off	3.203	5.032	4.184	5.011	4.105	4.602
Bandwidth above the cut off	6.815	6.461	7.424	7.521	6.981	7.712
Sample size left of the cut off	2975	2975	2975	2975	2975	2975
Sample size right of the cut off	1859	1859	1859	1859	1859	1859
Sample mean	2.586	2.394	2.231	2.690	1.853	1.923

1 % significance indicated by ***, 5% by ** and 10% by *

Preceding table shows the impact of cash transfers programme on acquisitions of various sanitation services in Pakistan. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better sanitation services. BISP beneficiaries' analysis depicts the substantial sway towards more safe sanitation services as compared to sanitation

services with greater health risks. So greater the amount and scope of cash transfer programme, greater will be the shift towards the safer sanitation acquisitions like flush with pit and flush with open drain while all other sanitation services as mentioned in above table are insignificant and have no plausibility.

4.3(i): Provincial analysis of sanitation using BISP survey 2016

Punjab	Flush with public sewerage	Flush with pit	Dry raised latrines	Dry pit latrines	No toilet	Flush with open drain
Fixed Bandwidth =5						
RDD estimates	0.0315**	0.114**	0.037	0.095	-0.001*	0.173**
P –values robust	0.051	0.039	0.265	0.105	0.061	0.048
Sample size left of the cut off	1375	1375	1375	1375	1375	1375
Sample size right of the cut off	857	857	857	857	857	857
Optimal bandwidth						
RDD estimate	0.053	0.168*	0.041	0.107	-0.003	0.195
P values robust	0.112	0.015	0.165	0.205	0.060	0.093
Bandwidth below the cut off	3.584	4.015	4.763	5.378	3.276	4.704
Bandwidth above the cut off	7.542	6.986	6.428	7.942	6.981	7.152
Sample size left of the cut off	2167	2167	2167	2167	2167	2167
Sample size right of the cut off	1986	1986	1986	1986	1986	1986
Sample mean	2.739	2.451	2.235	2.763	2.299	2.738

1 % significance indicated by ***, 5% by ** and 10% by *

As we hypothesises in chapter 3, it is now become vivid that Preceding table shows the impact of cash transfers programme on acquisitions of various sanitation services in Punjab. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better sanitation services. BISP beneficiaries’ analysis depicts the substantial sway towards safer

sanitation sources as compared to sanitation services with greater health risks. So greater the amount and scope of cash transfer programme, greater will be the shift towards the safer sanitation acquisitions like flush with public sewerage, flush with pit and flush with open drain , no toilet while all other sanitation services as mentioned in above table are insignificant and have no plausibility.

4.3(ii): Provincial analysis of sanitation using BISP survey 2016

KPK	Flush with public sewerage	Flush with pit	Dry raised latrines	Dry pit latrines	No toilet	Flush with open drain
Fixed Bandwidth =5						
RDD estimates	0.0139*	0.197**	0.016	0.093	-0.002	0.254
P –values robust	0.057	0.025	0.157	0.289	0.428	0.099
Sample size left of the cut off	796	796	796	796	796	796
Sample size right of the cut off	467	467	467	467	467	467
Optimal bandwidth						
RDD estimate	0.109	0.259*	0.092	0.095	-0.072	0.279
P values robust	0.102	0.054	0.167	0.192	0.290	0.156
Bandwidth below the cut off	3.293	4.953	3.765	4.890	4.105	4.102
Bandwidth above the cut off	7.142	7.476	6.452	7.521	7.087	7.692
Sample size left of the cut off	1178	1178	1178	1178	1178	1178
Sample size right of the cut off	658	658	658	658	658	658
Sample mean	1.031	0.932	1.102	0.981	1.105	0.963

1 % significance indicated by ***, 5% by ** and 10% by *

As we hypothesised in chapter 3, it is now become vivid that Preceding table shows the impact of cash transfers programme on acquisitions of various sanitation services in KPK. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better sanitation services. BISP beneficiaries' analysis depicts the substantial sway towards more safe sanitation services as compared to sanitation services with greater health risks. So greater the amount and scope of cash transfer programme, greater will be the shift towards the safer sanitation acquisitions like flush with public sewerage and flush with pit while all other sanitation services as mentioned in above table are insignificant and have no plausibility.

4.3(iii): Provincial analysis of sanitation using BISP survey 2016

Sindh	Flush with public sewerage	Flush with pit	Dry raised latrines	Dry pit latrines	No toilet	Flush with open drain
Fixed Bandwidth =5						
RDD estimates	0.119**	0.038	0.254*	0.111	-0.001	0.093
P –values robust	0.041	0.192	0.064	0.209	0.103	0.128
Sample size left of the cut off	1269	1269	1269	1269	1269	1269
Sample size right of the cut off	942	942	942	942	942	942
Optimal bandwidth						
RDD estimate	0.147	0.109	0.274	0.092	-0.002	0.075
P values robust	0.102	0.282	0.202	0.213	0.186	0.190
Bandwidth below the cut off	3.182	3.473	4.692	4.092	5.192	4.132
Bandwidth above the cut off	6.678	7.982	7.712	7.002	7.624	7.142
Sample size left of the cut off	1469	1469	1469	1469	1469	1469
Sample size right of the cut off	890	890	890	890	890	890
Sample mean	1.461	1.582	1.293	1.490	1.207	1.321

1 % significance indicated by ***, 5% by ** and 10% by *

Preceding table shows the impact of cash transfers programme on acquisitions of various sanitation services in Sindh. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better sanitation services. BISP beneficiaries' analysis depicts the substantial sway towards more safe sanitation services as compared to sanitation services with greater health risks. So greater the amount and scope of cash transfer programme, greater will be the shift towards the safer sanitation acquisitions like flush with public sewerage

and dry raised latrines while all other sanitation services as mentioned in above table are insignificant and have no plausibility.

4.3(iv): Provincial analysis of sanitation using BISP survey 2016

Balochistan	Flush with public sewerage	Flush with pit	Dry raised latrines	Dry pit latrines	No toilet	Flush with open drain
Fixed Bandwidth =5						
RDD estimates	0.105*	0.012	0.098	0.093	-0.001	0.032
P –values robust	0.071	0.209	0.151	0.301	0.109	0.292
Sample size left of the cut off	297	297	297	297	297	297
Sample size right of the cut off	132	132	132	132	132	132
Optimal bandwidth						
RDD estimate	0.139	0.019	0.112	0.089	-0.005	0.028
P values robust	0.133	0.198	0.153	0.192	0.123	0.287
Bandwidth below the cut off	3.432	3.203	4.602	4.123	3.321	4.674
Bandwidth above the cut off	7.321	6.234	7.853	6.521	6.981	7.137
Sample size left of the cut off	314	314	314	314	314	314
Sample size right of the cut off	157	157	157	157	157	157
Sample mean	0.631		0.576	0.501	0.542	0.515

1 % significance indicated by ***, 5% by ** and 10% by *

As we hypothesises in chapter 3, it is now become vivid that Preceding table shows the impact of cash transfers programme on acquisitions of various sanitation services. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better sanitation services. BISP beneficiaries’ analysis depicts the substantial sway towards more safe sanitation services as compared to sanitation services with greater health risks. So greater the

amount and scope of cash transfer programme, greater will be the shift towards the safer sanitation acquisitions like flush with public sewerage while all other water sources as mentioned in above table are insignificant and have no plausibility.

Section 4.4: Aggregated analysis of dwelling using BISP survey 2016

	Independent house /compound	Apartme nt /flat	Part of large unit	Part of compound	Owner occupied (not self-hired)	Owner occupied (self-hired)	On rent	Subsidized rent	Rent free	Electricity
Fixed bandwidth=5										
RDD estimates	0.147**	0.047	0.046	0.001	0.026*	0.037	0.008	0.031	0.088	0.108*
P –values robust	0.040	0.208	0.193	0.232	0.037	0.251	0.176	0.680	0.113	0.037
Sample size left of the cut off	6381	6381	6381	6381	6381	6381	6381	6381	6381	6381
Sample size right of the cut off	5011	5011	5011	5011	5011	5011	5011	5011	5011	5011
Optimal bandwidth										
RDD estimate	0.147***	0.032	0.019	0.039	0.001	0.077	0.051	0.002	0.138	0.116*
P values robust	0.008	0.231	0.527	0.139	0.938	0.225	0.412	0.361	0.112	0.030
Bandwidth below the cut off	4.602	4.702	3.781	3.596	4.015	3.870	4.321	4.137	4.061	3.614
Bandwidth above the cut off	6.291	6.698	6.216	6.986	7.547	7.279	6.829	6.249	6.904	6.140
Sample size left of the cut off	6581	5916	6103	6217	6210	6477	6631	6589	6625	6501
Sample size right of the cut off	5201	5371	5692	5715	5745	5711	5831	5719	5903	5824
Sample mean	5.402	5.375	5.418	4.429	5.410	5.386	4.971	5.413	5.421	5.873

1 % significance indicated by ***, 5% by ** and 10% by *

Preceding table shows the impact of cash transfers programme on acquisitions of various dwelling types in Pakistan. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better dwelling services. BISP beneficiaries' analysis depicts the substantial sway towards more safe dwelling services as compared to dwelling services with greater health risks. So greater the amount and scope of cash transfer programme, greater will be the shift towards the safer dwelling acquisitions like independent house/compound, on rent and electricity while all other dwelling types as mentioned in above table are insignificant and have no plausibility.

4.4(i): Provincial analysis of dwelling using BISP surveys 2016

Punjab	Independent house /compound	Apartment /flat	Part of large unit	Part of compound	Owner occupied (not self-hired)	Owner occupied (self-hired)	On rent	Subsidized rent	Electricity
Fixed bandwidth=5									
RDD estimates	0.113**	0.041	0.027	0.002	0.017*	0.032	0.005	0.008	0.096**
P –values robust	0.047	0.109	0.193	0.167	0.059	0.251	0.163	0.236	0.039
Sample size left of the cut off	1375	1375	1375	1375	1375	1375	1375	1375	1375
Sample size right of the cut off	857	857	857	857	857	857	857	857	857
Optimal bandwidth									
RDD estimate	0.139*	0.036	0.020	0.006	0.011	0.034	0.006	0.007	0.098*
P values robust	0.069	0.123	0.157	0.139	0.247	0.225	0.112	0.361	0.076
Bandwidth below the cut off	3.206	4.602	4.390	3.596	3.189	3.870	3.091	4.189	4.001
Bandwidth above the cut off	7.389	7.012	7.142	6.986	6.431	7.001	6.829	7.002	6.904
Sample size left of the cut off	2167	2167	2167	2167	2167	2167	2167	2167	2167
Sample size right of the cut off	1986	1986	1986	1986	1986	1986	1986	1986	1986
Sample mean	2.382	2.178	2.985	2.091	2.576	2.871	2.178	2.892	2.981

1 % significance indicated by ***, 5% by ** and 10% by *

As we hypothesised in chapter 3, it is now become vivid that Preceding table shows the impact of cash transfers programme on acquisitions of various dwelling types in Punjab. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better dwelling types. BISP beneficiaries' analysis depicts the substantial sway towards more safe dwelling types as compared to dwelling types with greater health risks. So greater the amount and scope of cash transfer programme, greater will be the shift towards the safer dwelling acquisitions like independent house/compound, owner occupied(not self-hired) and electricity while all other water sources as mentioned in above table are insignificant and have no plausibility.

4.4(ii): Provincial analysis of dwelling using BISP surveys 2016

KPK subsidized rent	independent house / Compound	apartment/ Flat	part of large house	part of compound	owner occupied (not self-hired)	owner occupied (self-hired)	on	electricity	
Fixed									
bandwidth=5									
RDD estimates	0.102*	0.028	0.031	0.003	0.016*	0.092	0.002	0.001	0.058
P –values robust	0.087	0.105	0.101	0.117	0.094	0.124	0.146	0.263	0.147
Sample size left of the cut off	796	796	796	796	796	796	796	796	796
Sample size right of the cut off	467	467	467	467	467	467	467	467	467
Optimal									
bandwidth									
RDD estimate	0.113	0.327	0.026	0.004	0.019	0.089	0.003	0.002	0.061
P values robust	0.162	0.179	0.280	0.221	0.101	0.225	0.322	0.361	0.112
Bandwidth below the cut off	4.602	4.642	3.781	3.596	3.626	3.870	3.098	3.132	4.954
Bandwidth above the cut off	7.953	7.932	7.095	6.986	7.547	7.090	6.829	7.707	6.904
Sample size left of the cut off	1178	1178	1178	1178	1178	1178	1178	1178	1178
Sample size right of the cut off	658	658	658	658	658	658	658	658	658
Sample mean	0.976	0.932	0.909	0.932	0.4935	0.976	0.908	0.901	0.993

1 % significance indicated by ***, 5% by ** and 10% by *

As we hypothesised in chapter 3, it is now become vivid that Preceding table shows the impact of cash transfers programme on acquisitions of various dwelling types in KPK. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better dwelling types. BISP beneficiaries' analysis depicts the substantial sway towards more safe dwelling types as compared to dwelling types with greater health risks. So greater the amount and scope of cash transfer programme, greater will be the shift towards the safer dwelling acquisitions like independent house/compound and subsidized rent(not self-hired) while all other dwelling types as mentioned in above table are insignificant and have no plausibility.

4.4(iii): Provincial analysis of dwelling using BISP survey 2016

Sindh	Independent house /compound	Apartment /flat	Part of large unit	Part of compound	Owner occupied (not self-hired)	Owner occupied (self-hired)	On rent	Subsidized rent	Electricity
Fixed bandwidth=5									
RDD estimates	0.101**	0.006	0.023	0.002	0.019*	0.029	0.013	0.009	0.064
P –values robust	0.050	0.115	0.185	0.232	0.083	0.201	0.162	0.268	0.165
Sample size left of the cut off	1269	1269	1269	1269	1269	1269	1269	1269	1269
Sample size right of the cut off	942	942	942	942	942	942	942	942	942
Optimal bandwidth									
RDD estimate	0.106	0.056	0.007	0.001	0.021	0.030	0.011	0.008	0.066
P values robust	0.103	0.263	0.271	0.301	0.101	0.252	0.472	0.361	0.212
Bandwidth below the cut off	4.602	4.642	4.098	4.965	4.002	3.870	3.123	4.432	4.852
Bandwidth above the cut off	7.543	7.456	7.975	6.986	6.854	7.279	6.698	7.005	6.904
Sample size left of the cut off	1469	1469	1469	1469	1469	1469	1469	1469	1469
Sample size right of the cut off	890	890	890	890	890	890	890	890	890
Sample mean	1.654	1.684	1.732	1.864	1.620	1.842	1.698	1.654	1.908

1 % significance indicated by ***, 5% by ** and 10% by *

As we hypothesises in chapter 3, it is now become vivid that Preceding table shows the impact of cash transfers programme on acquisitions of various dwelling types in Sindh. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better dwelling types. BISP beneficiaries’ analysis depicts the substantial sway towards more safe dwelling types as compared to dwelling types with greater health risks. So greater the amount

and scope of cash transfer programme, greater will be the shift towards the safer dwelling acquisitions like independent house/compound and owner occupied (not self-hired) while all other dwelling sources as mentioned in above table are insignificant and have no plausibility.

4.4(iv): Provincial analysis of dwelling using BISP survey 2016

Balochistan subsidized rent	independent house / Compound	apartment/ flat	part of large unit	part of unit	owner occupied compound	owner occupied (not self-hired)	owner occupied (self-hired)	on electricity	
Fixed bandwidth=5									
RDD estimates	0.072*	0.002	0.011	0.001	0.010	0.013	0.009	0.003	0.032*
P –values robust	0.084	0.152	0.180	0.283	0.117	0.193	0.243	0.327	0.094
Sample size left of the cut off	297	297	297	297	297	297	297	297	297
Sample size right of the cut off	132	132	132	132	132	132	132	132	132
Optimal bandwidth									
RDD estimate	0.075	0.003	0.010	0.002	0.011	0.012	0.008	0.002	0.033
P values robust	0.112	0.469	0.243	0.311	0.355	0.490	0.307	0.383	0.114
Bandwidth below the cut off	5.679	4.921	4.010	4.381	3.004	3.450	3.945	4.727	4.736
Bandwidth above the cut off	7.934	7.090	6.815	7.004	6.723	6.279	6.907	7.153	7.370
Sample size left of the cut off	314	314	314	314	314	314	314	314	314
Sample size right of the cut off	157	157	157	157	157	157	157	157	157
Sample mean	0.634	0.476	0.435	0.376	0.494	0.690	0.368	0.437	0.754

1 % significance indicated by ***, 5% by ** and 10% by *

As we hypothesised in chapter 3, it is now become vivid that Preceding table shows the impact of cash transfers programme on acquisitions of various dwelling types in Balochistan. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better dwelling types. BISP beneficiaries' analysis depicts the substantial sway towards more safe dwelling types as compared to dwelling types with greater health risks. So greater the amount and scope of cash transfer programme, greater will be the shift towards the safer dwelling acquisitions like independent house/ compound and electricity while all other dwelling types as mentioned in above table are insignificant and have no plausibility.

Section 4.5: The case of Dera Ghazi Khan

Dera Ghazi Khan is located in a strip between Indus River and Koh-Suleman range of mountains separating it from province Baluchistan. It is surrounded by Dera Ismail Khan on North and Rajanpur on its South. Indus River flows on across East while the district is situated in between districts of Muzaffargarh and Layyah. Lorelai and Dera Bugatti districts of Baluchistan Province abut West frontier and separated by Koh-Suleman range of mountains. Total population of Dera Ghazi Khan District in census 2017 is 2,872,201. Total number of tehsils in Dera ghazi khan district are four; Dera Ghazi Khan, Kot Chuta, Taunsa Sharif and de excluded area of Dera ghazi khan. Saraiki is the main spoken language in cities and towns but in rural areas, Balochi is spoken as well. Almost 20% of city population speak Urdu. According to Pakistan social and living standards measurement survey (2014-15) realized that 32% population of targeted area has toilet facility while 8% population has access to clean drinking water. In education Dera Ghazi

khan ranked 20 across Pakistan with literacy rate 75%. Current study utilizes data that entails 154 sample units from the said area with threshold level 16.17.

4.5(i): Descriptive statistics of Dera Ghazi Khan regarding BISP beneficiaries

<i>Dwelling Type</i>	Independent house/ compound	Apartm ent/flat	Part of large unit	Owner Occupied (Not self- hired)	Owner Occupie d (Self- hired)	on rent	Subsidi zed rent	Rent free.	Electricity
Mean	0.78	0.01	0.06	0.68	0.11	0.03	0.00	0.013	0.57
<i>Sanitation</i>	Flush connected with public sewerage	Flush connect ed with pit	Flush connected with open drain	Dry raised latrines	Dry pit latrines	Not toilet			
Mean	0.11	0.26	0.14	0.09	0.13	0.17			
<i>Water sources</i>	Piped water	Hand pump	Motorized pumping/t ube well	Open well	Closed well	Pond	Canal/r iver/str eam	spring	
Mean	0.16	0.39	0.29	0.02	0.01	0.00	0.03	0.000	

**4.5(ii): DERA GHAZI KHAN Analysis of water using BISP survey
2016**

	Hand pump	Pond	Canal/river/stream	Spring	Piped water	Open well	Close d well	Tube well/motorized pumping
Fixed bandwidth=5								
RDD estimates	0.072**	0.058	0.038	0.019	0.022*	0.056	0.000	0.051**
P –values robust	0.041	0.137	0.201	0.513	0.053	0.510	0.328	0.037
Sample size left of the cut off	73	73	73	73	73	73	73	73
Sample size right of the cut off	51	51	51	51	51	51	51	51
Optimal bandwidth								
RDD estimate	0.061*	0.062	0.035	0.021	0.026	0.053	0.000	0.061*
P values robust	0.063	0.231	0.852	0.532	0.193	0.281	0.395	0.075
2Bandwidth below the cut off	3.952	4.102	4.299	3.981	4.305	4.002	3.814	3.401
Bandwidth above the cut off	6.834	7.102	7.255	6.179	7.143	7.144	6.901	6.815
Sample size left of the cut off	86	86	86	86	86	86	86	86
Sample size right of the cut off	69	69	69	69	69	69	69	69
Sample mean	1.853	1.705	1.133	1.592	1.115	1.631	1.536	1.728

1 % significance indicated by ***, 5% by ** and 10% by *

As we hypothesises in chapter 3, it is now become vivid that Preceding table shows the impact of cash transfers programme on acquisitions of various water resources in Dera Ghazi Khan. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better water resources. BISP beneficiaries' analysis depicts the substantial sway towards more safe water resources as compared to water resources with greater health risks. So greater the amount and scope of cash transfer programme, greater will be the shift towards the safer water acquisitions like tube hand pump, well / motorized pumping and piped water while all other water sources as mentioned in above table are insignificant and have no plausibility.

4.5(iii): DERA GHAZI KHAN Analysis of sanitation using BISP survey 2016

	Flush with public sewerage	Flush with pit	Dry raised latrines	Dry pit latrines	No toilet	Flush with open drain
Fixed bandwidth=5						
RDD estimates	0.304*	0.138**	0.295	0.098	-0.002*	0.181**
P –values robust	0.058	0.039	0.299	0.163	0.056	0.041
Sample size left of the cut off	73	73	73	73	73	73
Sample size right of the cut off	51	51	51	51	51	51
Optimal bandwidth						
RDD estimate	0.328	0.147*	0.289	0.099	-0.001	0.193*
P values robust	0.237	0.063	0.287	0.153	0.180	0.071
Bandwidth below the cut off	3.134	4.149	3.981	4.012	3.991	4.602
Bandwidth above the cut off	7.103	7.231	6.513	7.432	6.981	7.183
Sample size left of the cut off	86	86	86	86	86	86
Sample size right of the cut off	69	69	69	69	69	69
Sample mean	1.534	1.763	1.141	1.432	1.258	1.692

1 % significance indicated by ***, 5% by ** and 10% by *

As we hypothesised in chapter 3, it is now become vivid that Preceding table shows the impact of cash transfers programme on acquisitions of various sanitation services in Dera Ghazi Khan. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better sanitation services. BISP beneficiaries' analysis depicts the substantial sway towards safer sanitation sources as compared to sanitation services with greater health risks. So greater the amount and scope of cash transfer programme, greater will be the shift towards the safer sanitation acquisitions like flush with public sewerage, flush with pit and flush with open drain , no toilet while all other sanitation services as mentioned in above table are insignificant and have no plausibility.

**4.5(iv): DERA GHAZI KHAN Analysis of dwelling using BISP survey
2016**

	Independent house /compound	Apartment /flat	Part of large unit	Part of compound	Owner occupied (not self-hired)	Owner occupied (self-hired)	On rent	Subsidized rent	Electricity
Fixed bandwidth=5									
RDD estimates	0.109*	0.389	0.029	0.003	0.013	0.030	0.006	0.004	0.098**
P –values robust	0.081	0.143	0.205	0.167	0.153	0.251	0.263	0.135	0.026
Sample size left of the cut off	73	73	73	73	73	73	73	73	73
Sample size right of the cut off	51	51	51	51	51	51	51	51	51
Optimal bandwidth									
RDD estimate	0.119	0.351	0.031	0.002	0.016	0.031	0.005	0.006	0.099*
P values robust	0.129	0.123	0.259	0.108	0.139	0.225	0.112	0.209	0.081
Bandwidth below the cut off	3.206	3.815	4.014	3.983	3.815	4.131	3.992	4.189	4.215
Bandwidth above the cut off	6.583	6.132	7.142	6.493	6.431	7.001	6.932	7.002	7.395
Sample size left of the cut off	86	86	86	86	86	86	86	86	86
Sample size right of the cut off	69	69	69	69	69	69	69	69	69
Sample mean	1.632	1.141	1.210	1.015	1.325	1.138	1.298	1.109	1.872

1 % significance indicated by ***, 5% by ** and 10% by *

As we hypothesised in chapter 3, it is now become vivid that Preceding table shows the impact of cash transfers programme on acquisitions of various dwelling types in Dera Ghazi Khan. It is evident from the empirical outcome that cash transfers has significantly influenced the attainment of better dwelling types. BISP beneficiaries' analysis depicts the substantial sway towards more safe dwelling types as compared to dwelling types with greater health risks. So greater the amount and scope of cash transfer programme, greater will be the shift towards the safer dwelling acquisitions like independent house/compound and electricity while all other water sources as mentioned in above table are insignificant and have no plausibility

Chapter 5

Conclusion and Recommendations

Impact of BISP program is assessed using fuzzy regression discontinuity technique and it is found to have some substantial effects on environmental services held by household characteristics; dwelling, sanitation and drinking water amenities. Regression Discontinuity Design is primarily used to assess the causal inferences where controlled environment is difficult to achieve. In this study, BISP is analyzed by using data of 2016 survey report having cut-off score of 16.17 and to become BISP beneficiary a household must have poverty score below the threshold level. The report mainly consists of beneficiary and non-beneficiary respondents and covers wide ranging socio-economic household characteristics. Current study delineated the impact of being BISP beneficiary or not on environmental services.

Findings of this study suggest positive and significant impact of BISP on adoption of some better drinking water resources among BISP beneficiary. At aggregate level, there is substantial shift towards hand-pump and motorized drinking water resources and causative agent is BISP cash transfers as supported by RDD estimates. Given the availability and affordability of water resources in case of Pakistan and it seems highly unlikely in graphical representation that this enormous shift would have been in the absence of BISP.

Sanitation, another dimension of household that is pivotal indicator of household betterment, is positively influenced by this cash transfer program. Sanitation entails wide range of indicators and at aggregate level there is significant impact on attainment of hygiene. People under BISP have momentous shift towards proper sanitation amenities. Same is the case with better dwelling

facilities. BISP beneficiary tend to have improved dwelling comforts. There is significant gain in independent house and electricity connections.

Recommendations

In light of the above findings, it is evident that Cash Transfers Programmes enhance people's betterment. Reduce the hardness of most fixed issues like hygiene, dwelling and water facilities, etc. Current Government stance to improve health and environment in Pakistan. Especially health, because all circumstances disturb human health. Due to Lack of resources people do not solve these burning issues in all over the world, especially in Pakistan. To overcome this burden in Pakistan and achieving SDGs goals, it is suggested that the Government should increase cash transfers amount and program coverage for this purpose. In case government takes these steps, people will enjoy. These steps taken by government peoples are enjoying the best use of environmental services and reduce environment poverty in Pakistan.

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Appendix 1

PROVINCIAL SANITATION COVERAGE²⁶

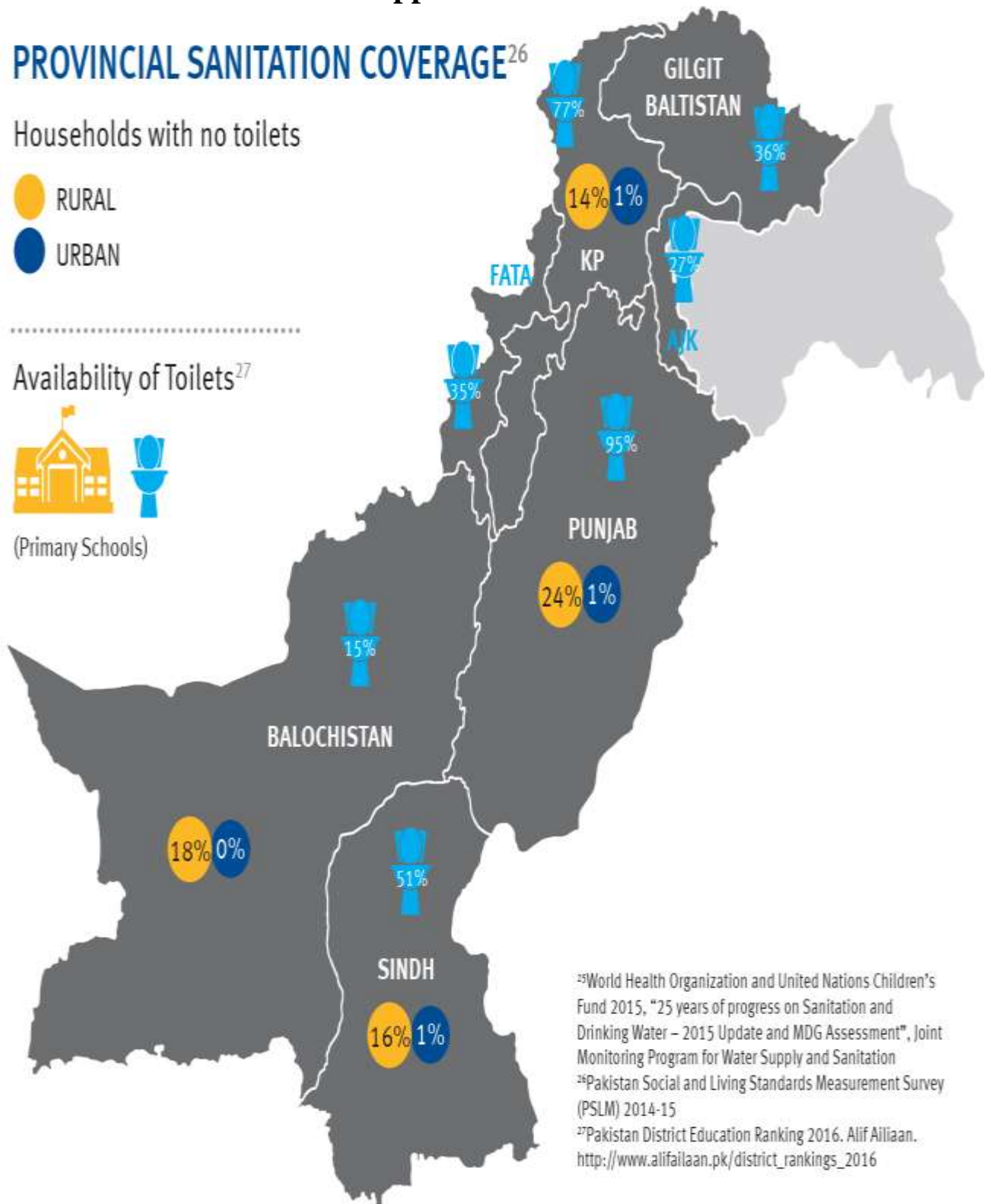
Households with no toilets



Availability of Toilets²⁷



(Primary Schools)



²⁶World Health Organization and United Nations Children's Fund 2015, "25 years of progress on Sanitation and Drinking Water – 2015 Update and MDG Assessment", Joint Monitoring Program for Water Supply and Sanitation

²⁷Pakistan Social and Living Standards Measurement Survey (PSLM) 2014-15

²⁸Pakistan District Education Ranking 2016. Alif Ailiaan. http://www.alifailaan.pk/district_rankings_2016

PROVINCIAL WATER COVERAGE²³

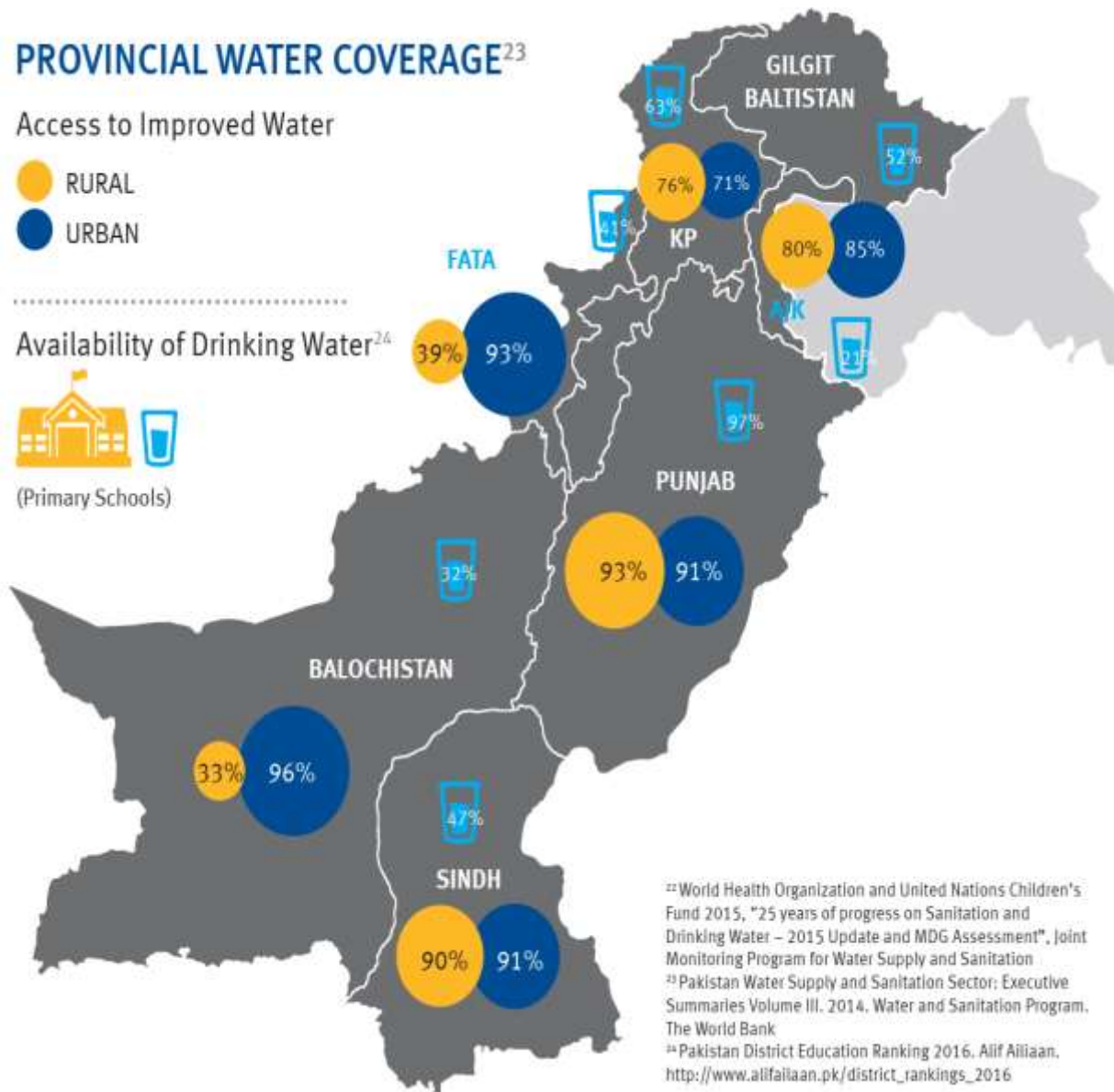
Access to Improved Water

- RURAL
- URBAN

Availability of Drinking Water²⁴



(Primary Schools)

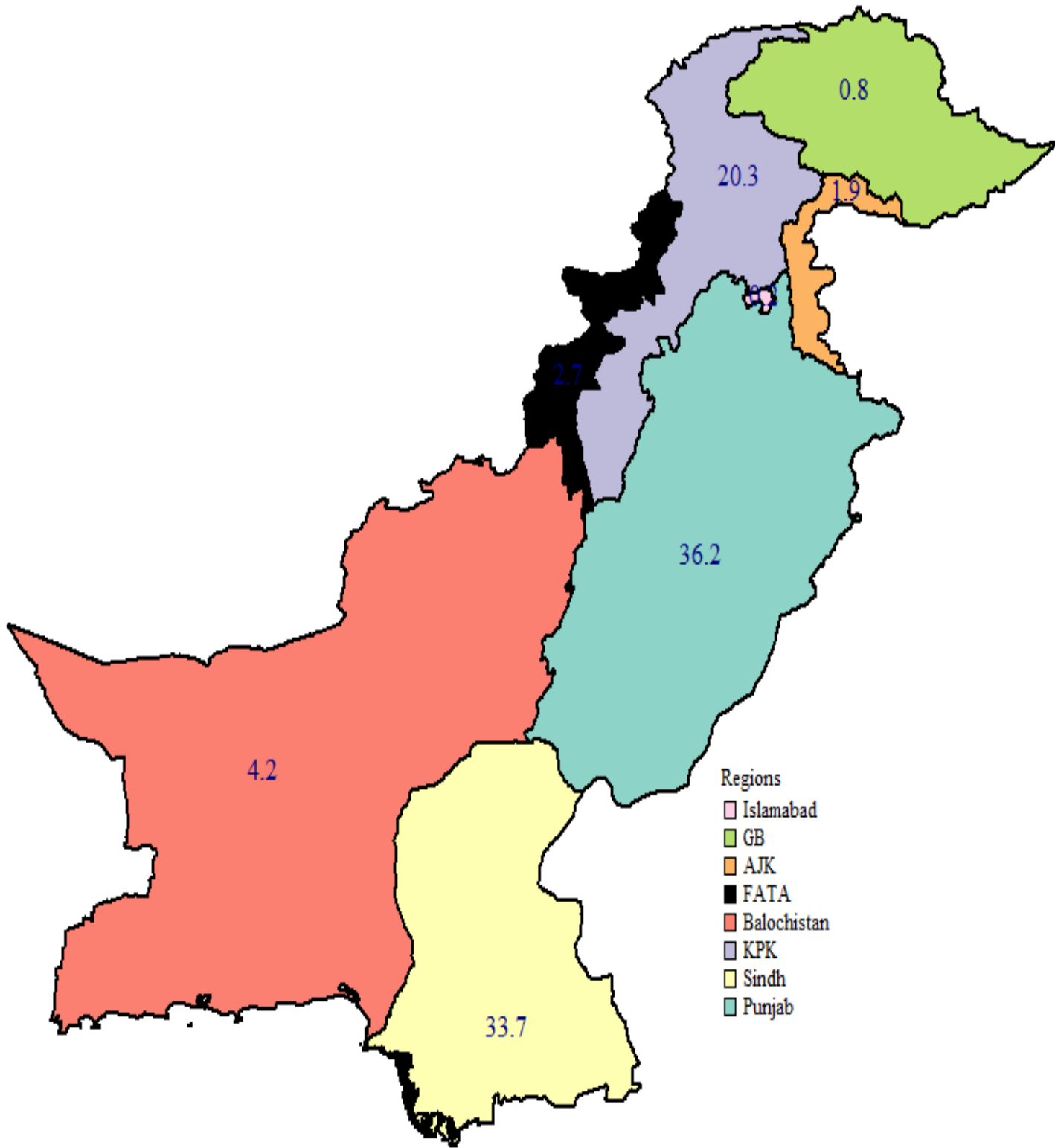


²³ World Health Organization and United Nations Children's Fund 2015, "25 years of progress on Sanitation and Drinking Water – 2015 Update and MDG Assessment", Joint Monitoring Program for Water Supply and Sanitation

²⁴ Pakistan Water Supply and Sanitation Sector: Executive Summaries Volume III. 2014. Water and Sanitation Program, The World Bank

²⁵ Pakistan District Education Ranking 2016. Alif Ailiaan. http://www.alifailaan.pk/district_rankings_2016

Comparison map



Questionnaire

Dwelling:

(A) What is the dwelling type?

- 1) Independent house/compound
- 2) apartment/flat
- 3) part of large house
- 4) Part of compound
- 5) other

(B) What is the main construction material of the roof and walls of the main dwelling?

- 1) Bricks
- 2) Mud bricks
- 3) Corrugated iron
- 4) Wood
- 5) Plastic
- 6) Cardboard
- 7) Mixture of mud and cement
- 8) Tile
- 9) Thatching

(C) What is your present occupancy status?

- 1) Owner occupied (not self-hired)
- 2) owner occupied (self- hired)
- 3) on rent
- 4) Subsidized rent
- 5) rent free

(D) Does your household have?

- 1) Electricity connection
- 2) No electricity connection

Water:

(E) What is the main source of drinking water for the household?

- 1) Piped water
- 2) hand pump
- 3) motorized pumping/tube well
- 4) Open well
- 5) Closed well
- 6) Pond
- 7) Canal/ Stream/ River
- 8) Spring
- 9) others

Sanitation:

(F) What type of toilet is used by your household?

- 1) Flush connected with public sewerage
- 2) Flush connected to pit
- 3) Flush connected to open drain
- 4) Dray raised latrines
- 5) Dry pit latrines
- 6) No toilet in the house

Table A: Indicators of environmental services

Data source: BISP survey 2016

Indicators	Indicators
Dwelling	Water
I. Independent house/compound	I. piped water
II. Apartment	II. hand pump
III. Part of large unit	III. motorized pumping/tube well
IV. Part of compound	IV. open well
V. Thatching	V. closed well
VI. Mud house	VI. pond
VII. Numbers of rooms	VII. canal/river/stream
VIII. Owner Occupied (not self-hired)	VIII. spring
IX. Owner Occupied (self-hired)	
X. On rent	
XI. Subsidized Rent	
XII. Free rent	
XIII. Electricity	
Sanitation	
I. Flush connected with sewerage	
II. Flush connected with pit	
III. Flush connected with open drain	
IV. Dry raised latrines	
V. Dry pit latrines	
VI. No toilet in the household	

Appendix 2

Figure A1: Dwelling characteristics of respondents under BISP survey report 2016

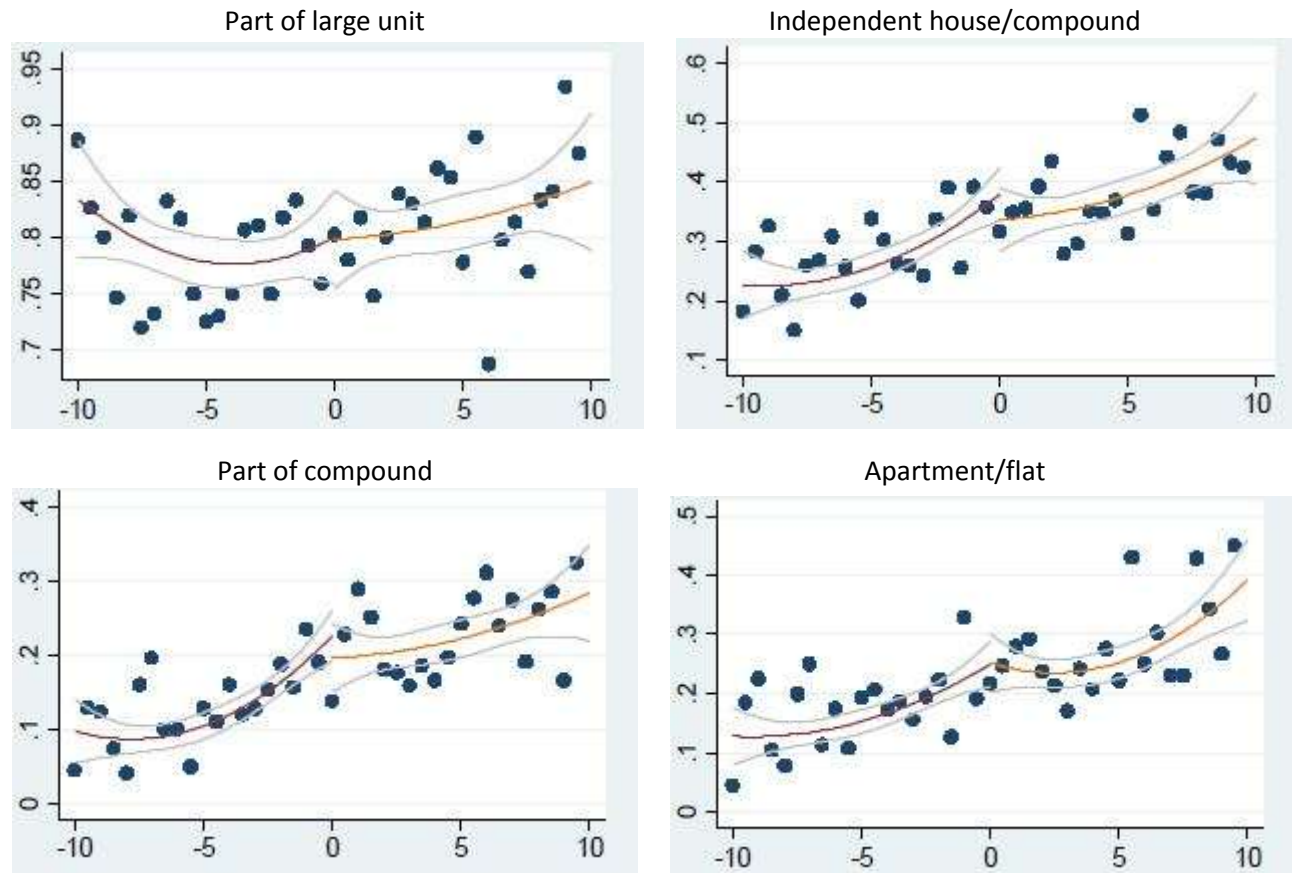


Figure A2: Dwelling characteristics of respondents under BISP survey report 2016

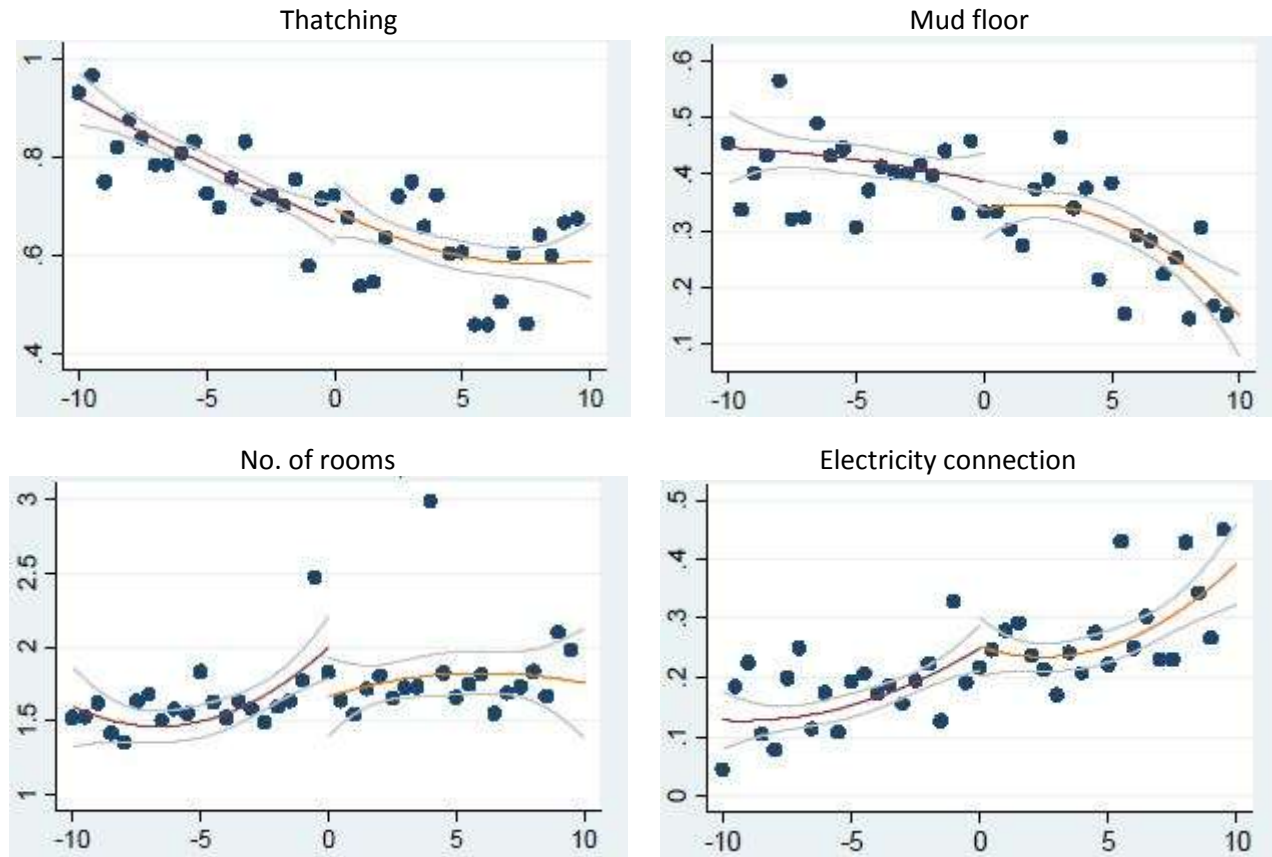


Figure B: Usage of water resources under BISP survey report 2016

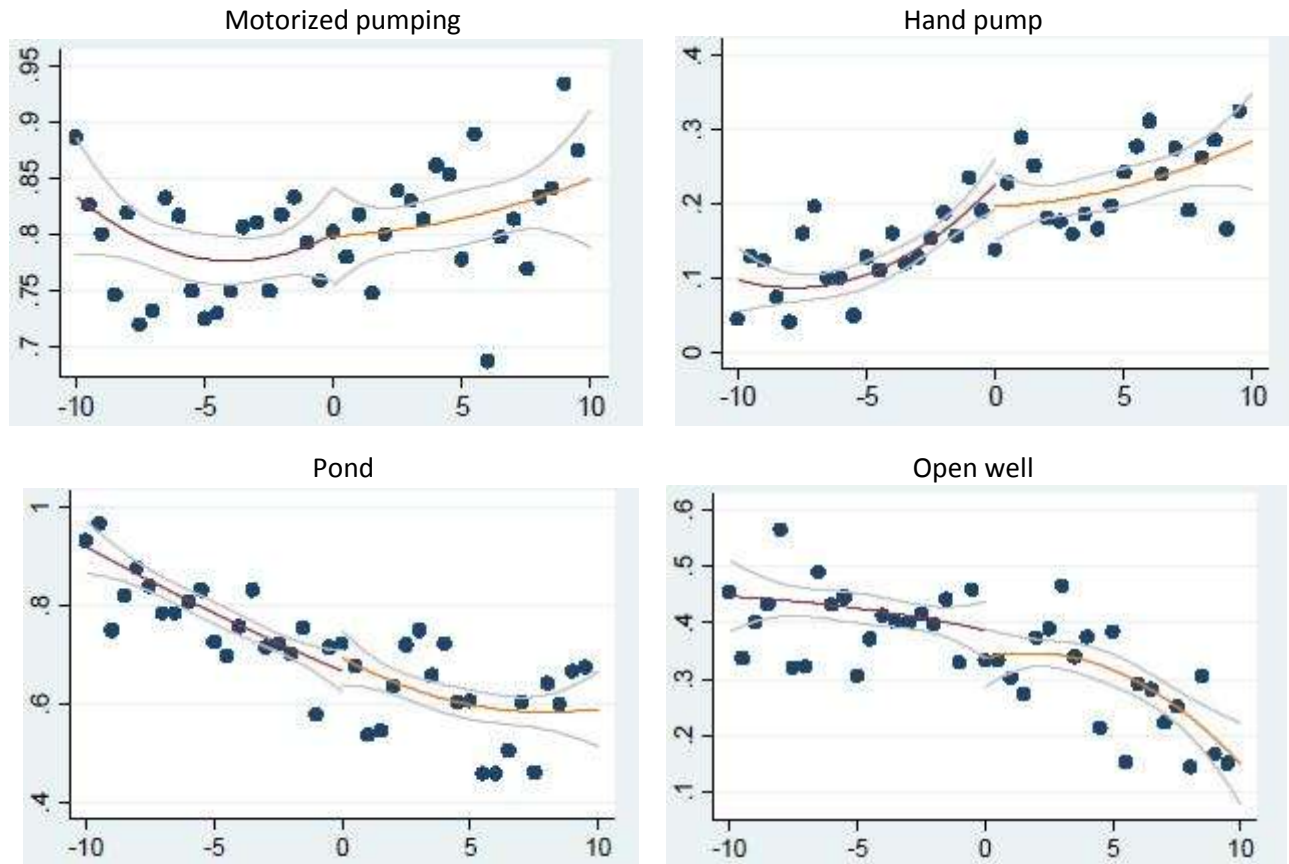


Figure C: Sanitation conditions under BISP survey report 2016

