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Effectiveness of Cash Transfer Programmes for Household Welfare in Pakistan: The Case of the Benazir Income Support Programme

Durr-e-Nayab

and

Shujaat Farooq

PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS
ISLAMABAD

Pakistan Institute of Development Economics
Islamabad, Pakistan

E-mail: publications@pide.org.pk
Website: http://www.pide.org.pk
Fax: +92-51-9248065

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1. INTRODUCTION

Cash transfer programmes are widely considered a 'magic bullet' for reducing poverty. Whether their impact on poverty reduction is as incredible as claimed is debatable, but they are gaining credibility as an effective safety net mechanism; consequently, they have become an integral part of inclusive growth strategies in many developing countries. As shown by Ali (2007), inclusive growth rests on three basic pillars: (i) the generation of full and productive employment, (ii) capability enhancement and skill development to broaden people's access to economic opportunities, and (iii) a basic level of wellbeing by providing social protection. Safety nets are at the core the last pillar, and are provided mainly through cash transfers, which can be conditional and unconditional.

The basic rationale behind social safety nets is to assist the poor to better manage risk and prevent them from adopting any coping strategy that undermines whatever few assets they have. The importance of these safety nets has been recognized not only for their social and economic value, but also as a means to improving political stability and controlling crime and social unrest. These safety nets help people resolve short-term stress and insecurity, which if properly managed, can also help alleviate long-term poverty. Direct transfers by the government are a common means of providing safety nets to the poor, and include the direct provision of food or cash (conditional or unconditional) to the target population. Other means include education and health subsidies; energy, water, and housing subsidies; and public works programmes. It is worth mentioning here that, although usually used interchangeably, one should differentiate between the term 'social protection' and 'social safety nets' [Bari, *et al.* (2005); Sayeed (2004)]. Conceptually, analytically, and by implication, social protection is a right that every citizen must have, while safety nets are instruments employed to achieve certain ends.[1]

Pakistan is going through a prolonged phase of stagflation, making the provision of social safety nets all the more important. Even during periods of high economic growth, the 'trickle-down effect' did not essentially take place, making it necessary to introduce safety nets in the overall poverty alleviation

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The authors are, respectively, Chief of Research and Research Economist at the Pakistan Institute of Development Economics (PIDE), Islamabad.

[1]For a detailed discussion on definitions of social protection in the Pakistani context and the difference between social protection and social safety nets, see Sayeed (2004) and Bari, Hooper, Kardar, Khan, Mohammad, and Sayeed (2005).

strategies. A variety of safety net programmes exist in the country, but to mitigate the situation resulting from low economic growth and high inflation—especially food inflation—the Government of Pakistan launched the Benazir Income Support Programme (BISP) in 2008. Households enrolled in the BISP are paid Rs 1,000 per month, without any conditions attached to this sum.

This paper aims to evaluate the BISP's effectiveness in sustaining recipient households' welfare in the face of the prevailing tough economic conditions. In the following sections, we examine the safety net programmes functioning in the country and the background to the BISP, the data sources and methodology employed; an evaluation of the BISP as an effective safety net initiative; and draw conclusions from the discussion and make policy recommendations.

2. THE BISP AND OTHER SAFETY NET PROGRAMMES IN PAKISTAN

Pakistan is one of the few developing countries whose constitution guarantees the social security of its citizens. Clauses (c) and (d) of Article 38 on the 'Promotion of social and economic wellbeing of the people' stipulate: "*The state shall: provide for all persons employed in the service of Pakistan or otherwise, social security by compulsory social insurance or other means; and provide basic necessities of life, such as food, clothing, housing, education and medical relief, for all such citizens, irrespective of sex, caste, creed or race, as are permanently or temporarily unable to earn their livelihood on account of infirmity, sickness or unemployment"* [Constitution of Pakistan (2010)].

Whether this commitment is fulfilled in practice is a separate debate, but a whole range of safety net programmes has been initiated over the years. A discussion on all these initiatives is beyond the scope of this paper, which focuses specifically on the BISP, but Table 1 summarizes the safety net programmes functioning in the country at present. For a useful discussion on safety net programmes operating in Pakistan see Jamal (2010), World Bank (2007), Arif (2006), Irfan (2005), and Bari, *et al.* (2005).

The studies carried out to evaluate various safety net programmes generally agree that these programmes have had a positive impact, but that their effectiveness could be significantly improved. Hindered by issues related to coverage, targeting, and implementation [Bari, *et al.* (2005); World Bank (2007)], such programmes need to not only improve their accessibility by the poor, but also devise means to encourage the poor to move out of poverty permanently and improve social security in the larger context. Other issues characterising these safety net programmes include duplication, overlap, lack of inter-organisational coordination, and fragmentation, which need to be tackled for such social initiatives to have greater impact.[2]

[2] For a detailed analysis of the government's current safety net initiatives, see Jamal (2010), World Bank (2007), Arif (2006), Irfan (2005) and Bari, *et al.* (2005).

Table 1

Current Social Safety Net Initiatives in Pakistan

Programme	Financed by	Benefit	Target Group	Coverage	Managed by
BISP	Public funds	Cash as income support	Married females from very poor households	National	Federal govt.
Microfinance	Donor funds	Cash as loan for setting up business	Poor entrepreneurs for self-employment to move them out of poverty	National	Rural support programmes and microfinance institutions
Pakistan Bait-ul-Maal	Public funds	Cash support for daughters' weddings, food, and education	Disabled persons, widows, orphans, and households living below poverty line	National	Federal govt.
People's Work Programme	Public funds	Cash for work	Provision of electricity, gas, farm-to-market roads, water supply, and such facilities to rural poor	National	Federal govt.
People's Rozgar Scheme	Commercial banks	Financing for selected businesses	Unemployed educated people	National	National Bank of Pakistan
Subsidies on wheat, sugar, and fertilizer	Public funds	In kind	Poor segments	National	Federal govt.
Utility stores	Public funds	Subsidy in prices	Poor segments	National	Federal govt.
Zakat and ushr	Levy on bank deposits and agricultural yield	Cash	Deserving/needy among Muslims	National	Govt., zakat and ushr committees
Child labour and children in bondage	Public funds	Protection and rehabilitation services	Working children facing abuse and exploitation	National	Federal and provincial govts., Federally Administered Tribal Areas, and Gilgit-Baltistan
Employees Old-Age Benefit Scheme	Employers' contribution	Cash	Formal sector employees	National	Federal govt.
Social health insurance	Individuals' contribution	Cash	General population	National	Federal govt.
Workers Welfare Fund	Employers' contribution	Housing, schools, and health facilities	Formal sector employees	National	Federal govt.

Source: Ministry of Finance (2012: 226).

The BISP was initiated in 2008 by the Government of Pakistan with the immediate objective of mitigating the impact of rampant inflation, especially food and fuel inflation, faced by the poor. Over the years, it has become the country's main safety net programme and has the largest number of beneficiaries of all public initiatives. By the end of the third quarter of the financial year 2011/12, the BISP covered over four million recipients nationwide with over Rs 122 billion disbursed among them [Ministry of Finance (2012)]. The programme envisaged reaching seven million nationwide by the end of the financial year 2011/12.

Initially, given the absence of data to help identify the underprivileged, parliamentarians were asked to ascertain which people in their constituencies most needed relief. They were provided simple application forms and eligibility criteria at the provincial and national level with which to identify the underprivileged and needy in their constituencies [Khan and Qutub (2010)]. Over time and in the face of criticism from the political opposition, however, a more scientific procedure was adopted. Eligible households are now identified through a survey and the application of a proxy means test (PMT) formula. The PMT procedure estimates the welfare status of a household on a scale of 0 to 100, helping to identify the poorest households [Ministry of Finance (2012)]. In order to apply the PMT formula, a nationwide poverty scorecard survey was conducted in 2010, covering around 27 million households. GPS readings were taken to increase the survey's accuracy, objectivity, and replicability, which also helped in devising coping strategies for natural disasters. The criteria for households eligible to receive monthly cash transfers from the BISP were then redefined as follows:

(1) The household's PMT score should be 16.17 or lower.
(2) There should be one female beneficiary per household.
(3) The female beneficiary should hold a computerised national identification card issued by the National Database and Registration Authority (NADRA).[3]

The BISP is implemented in all four provinces—Punjab, Sindh, Balochistan, and Khyber Pakhtunkhwa (KP)—the Federally Administered Tribal Areas, Azad Jammu and Kashmir, and Islamabad Capital Territory. Through their female members, eligible households receive a monthly cash transfer of Rs 1,000, which for a poor family with a monthly income of Rs 5,000 represents a 20 percent increase, equal to 12 percent of the minimum wage in Pakistan. Initially, payments to BISP-selected households were made through the Pakistan Post Office, which paid the money to recipients at their doorstep.

[3] The eligibility criteria used prior to the poverty scorecard survey in 2010 are used in this study, and are discussed in the following sections.

To increase the programme's transparency and reduce any possible pilferage, the BISP is now adopting more technology-based solutions such as the Benazir Debit Card, which recipients can use as ATM withdrawal cards every month; Smart Cards, authorized by a commercial bank; and phone-to-phone banking, which provides beneficiaries with free mobile phones and SIMs for the transfer of monthly cash assistance [Ministry of Finance (2012)].

A valuable feature of the programme is that it incorporates various graduation initiatives to help recipient households exit the poverty trap. Although it started as a solely cash transfer programme, the BISP launched various initiatives in 2011-12 to add a sense of permanence to the benefits gained by recipient households [BISP (2012)]. Each of these new programmes was initially launched in a few selected districts with the aim of extending them nationwide. These include: the *Waseela-e-Haq* microfinance programme, which provides soft loans of up to Rs 300,000 for setting up small businesses to households randomly selected by computers every month; the *Waseela-e-Rozgar* programme under which one member of selected households is given technical and vocational training to sustain his or her livelihood; the *Waseela-e-Sehat* programme, which provides life insurance cover of Rs 100,000 to the main earner of selected households; and the *Waseela-e-Taleem* programme under which the children of recipient households receive primary education [Ministry of Finance (2012); BISP (2012)].

This paper restricts itself to the cash transfer programme carried out under the BISP initiative. The literature expresses a strong concern about the dependency created among households receiving cash transfers [Kunnemann and Leonhard (2008); IBRD (2009)]. Dependency, as argued by Samson (2009: 46) implies "the choice by a social cash transfer recipient to forego a more sustaining livelihood due to the receipt of the cash transfer". Worldwide evidence, however, suggests otherwise. Studies conducted in many developing countries—including Brazil, Mexico, Kenya, and Zambia—analysing the impact of cash transfers similar to the BISP find that workers in recipient households look for employment more intensively than those from comparable poor households not receiving any such cash assistance [Samson (2009); Posel (2006); Kunnemann and Leonhard (2008); Samson and Williams (2007); Barrientos (2006) and Kidd (2006)].

Another factor that needs attention with regard to the BISP's design is the unconditionality of cash transfers to recipient households. Conditions are behavioural requirements that recipients must fulfil in order to remain eligible for cash transfers. These conditions are considered an effective tool for poverty alleviation, helping to break the inter-generational transmission of poverty by increasing individuals' human capital. Examples can be found in a number of successful programmes in different countries, including the Oportunidades/ PROGRESSA in Mexico, the Bolsa Escola and Bolsa Familia in Brazil, Food for Education in Bangladesh, and the Programme of Advancement through

Health and Education in Jamaica [Son (2008)]. The conditions laid down under these programmes are usually linked to education—especially girls' education—and health—generally women's and children's health. The idea behind this is that handing over cash to families is not enough to deal with poverty in the long run and that such conditions will obligate recipient households to empower themselves by investing in their human capital and, hence, improve their chances of decent employability and of moving out of poverty permanently.

Along with achieving the socially optimal targets of human capital, conditional cash transfers have other advantages including those mentioned by Adato and Hoddinott (2007):

(1) Lessening the possible stigma associated with cash transfers by considering it part of a social contract between the recipient household and the state.
(2) Preferred for political economy reasons, and making it politically and economically more acceptable in the larger context. Improvement in education and health indicators helps increase the credibility of a programme, which might otherwise be seen with suspicion, especially by non-beneficiaries.

Contrary to this view, there are those who believe that conditions compromise the very objective of poverty reduction, especially in the short run, by reducing the benefits of a cash transfer to a poor household by constraining its welfare choices. These imposed conditions can be, "expensive, inflexible, and inefficient—in the worst cases screening out the poorest and the most vulnerable. Often, the burden of complying with conditionalities falls disproportionately on women" [Samson (2006: 51)]. Some of the most common concerns raised for conditions attached to cash transfers include [observed by Handa and Davis (2006); Samson (2009) and Basett (2008); Son (2006); and Regalia (2006)]:

(1) The high administrative cost of handling conditional cash transfers might outweigh their positive impact.
(2) Lack of access to education and health facilities in poorer areas can make the condition redundant for the poor, hence making them ineligible for the cash transfer.
(3) The preferences of poor people may differ from the conditions imposed on them, thus reducing the welfare gains.
(4) Cultural and social exclusion and discrimination may leave the most needy out of the welfare circle.

Those opposing conditional cash transfers also consider them demeaning to the poor as such conditions imply that the poor do not know what is good for them. Following traditional economic theory, Basett (2008) argues that cash

transfers should, ideally, be unconditional. As rational beings, individuals make decisions to maximise their wellbeing, opting for choices where the perceived benefits outweigh the perceived costs. By this logic, a cash transfer will be most effectual when there are no conditions attached to it; the poor, as rational economic beings, will then maximise its benefits. If a cash transfer reduces the opportunity cost of sending a poor household's child to school instead of work, making the perceived benefits of education outweigh its cost, the household will decide to send the child to school without imposing any compulsory conditions. In a scenario where beneficiaries are informed, rational economic beings, the state is caring, and markets efficient, the IBRD (2008: 48-49) contends that, "The 'theoretical default'… should be to favour unconditional cash transfer".

Samson (2009) observes that, in some countries, structural factors account for poverty more than the behaviour and preferences of the poor. This would be true for any society, but to overcome these structural inequalities, restricting the poor from availing the opportunities that might be available to them otherwise keeps them stuck in the poverty trap. The need for a programme such as the BISP thus becomes important in the presence of vulnerable populations in the country who are more susceptible to inflationary trends and structural and social inequalities.

3. DATA AND METHODOLOGY

We use the Pakistan Panel Household Survey (PPHS), which was carried out by the Pakistan Institute of Development Economics (PIDE) in 2010, to evaluate the BISP, linking cash assistance with poverty dynamics. The PPHS comprised three rounds. The first round, initially named the Pakistan Rural Household Survey (PRHS), was conducted in 2001 and covered 2,721 rural households across all four provinces. The second round was carried out in 2004, covering 1,907 households in rural Sindh and Punjab, but not Balochistan or KP due to the prevailing security conditions. The third round was conducted in 2010, again in all four provinces, and added an urban sample to the survey, which led to it being renamed the PPHS. The urban sample of the PPHS 2010 was selected from the 16 districts that were included in the PRHS 2001. The PPHS 2010 thus covers 4,142 households across all four provinces in both rural and urban areas. These comprise 2,198 panel households in rural areas (from the PRHS 2001) and 602 split households from the original ones, so that the total rural sample stands at 2,800. The remaining 1,342 households are from urban areas in the selected districts to make up the total sample.[4]

[4] See the annex for the detailed household composition of the PRHS/PPHS sample's three rounds in 2001, 2004, and 2010.

The PPHS 2010 includes wide-ranging modules that help meet the objectives of this study. A detailed section of the survey questionnaire deals with the targeting process of various safety net programmes initiated by the government and individuals to protect marginalised segments of society. A transfers/assistance module provides information on the status of received transfers/assistance in three categories: (i) received assistance, (ii) attempted but did not succeed, and (iii) never attempted. Respondents were also asked how they had utilised the cash received. One limitation, however, is that the survey does not ask households how long they have been receiving any cash transfers/assistance; it only asks if they have received any cash assistance in the last 12 months, without specifying the exact duration for which the transfers have been taking place. For a better analysis of the impact of these transfers on household welfare, the exact duration of transfers received would have been valuable.

In order to analyse households' socio-demographic and economic characteristics and the status of assistance received, we classify households into three categories: (i) 'received' group, (ii) 'attempted' group, and (iii) 'never attempted' group. To analyse the effect of the BISP on household welfare independent of other cash transfers, two household categories are formed: (i) those that receive BISP cash assistance, and (ii) those that receive cash transfers from sources other than the BISP. Although the aim of safety net programmes is to improve the welfare of the poor, especially the most vulnerable, not all those in need necessarily receive assistance. Those that do are referred to as recipients, while those that do not are classified as 'non-recipients'.

We use the propensity score matching (PSM) method to analyse the welfare impact of BISP cash transfers rather than other methods such as logistic regression analysis, paired observations, or the double difference (DD) method. The PSM method has certain advantages suited to the issue under consideration. Logistic regression analysis tends to ignore selection biases and assumes that the socio-demographic and economic characteristics of recipient and non-recipient households are widely different. It is usually understood that the non-recipient group is comparatively better off and, therefore, less likely to receive assistance from safety net programmes—it is less likely that an upper-middle-income or high-income household in Pakistan will receive assistance from a zakat or Bait-ul-Maal programme. It is not advisable to use the mean outcome of non-recipient households as an approximation because recipient and non-recipient households usually differ socioeconomically, even in the absence of safety net programmes; moreover, a programme may sometimes select a recipient household on purpose [Kopeinig (2008)].

The paired observations and DD methods require household information before and after an intervention. The paired observations technique is usually applied only to one variable, and assumes no impact of

other variables, making it unsuitable in this case. The DD method is a non-experimental approach in which welfare changes over time are estimated relative to the outcome observed for a pre-intervention baseline. Although the PPHS 2001 and 2004 provide baseline information, it does not necessarily precede the intervention in question. In the present instance, the baseline information would not be homogenous since recipient households would likely have gone through numerous socio-demographic and economic changes during 2004 and 2010, making it impossible to capture the heterogeneity over that duration.

The PSM method developed by Rosenbaum and Rubin (1983) is one possible solution to selection bias. The idea behind this is to find a comparison group with similar characteristics to the recipient group in all aspects but one, that is, the comparison group does not receive any cash assistance. This method balances the observed covariates between the recipient group and non-recipient group based on the similarity of their predicted probabilities of receiving assistance—known as their 'propensity scores'. The difference between the PSM method and a pure experiment is that the latter would also assure that the treatment and comparison groups were identical in terms of the distribution of unobserved characteristics [Ravallion (2003)].

As noted earlier, the PPHS identifies two groups on the basis of status of cash assistance: recipients and non-recipients. In our PSM analysis, the former are labelled 'treated units' and the latter are 'non-treated units'. The treated units are matched to non-treated units on the basis of propensity scores:

$$P(X_i) = \text{prob}\,(D_i = 1 \mid X_i) = E(D \mid X_i) \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (1)$$

where

$P(X_i) = F(h(X_i))$

$F(h(X_i))$ can have a normal or logistic cumulative distribution.

$D_i = 1$ if the household has received assistance and 0 otherwise.

X_i is a vector of pre-treatment characteristics.

Before estimating propensity scores, two conditions must be met to estimate the *average treatment on the treated* (ATT) effect, based on the propensity score [Rosenbaum and Rubin (1983)]. The first condition is the balancing of the pre-treatment variables, given the propensity score. If p(X) is the propensity score, then:

$$D_i = X_i \mid p(X_i) \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (2)$$

If the balancing hypothesis is satisfied, the pre-treatment characteristics must be the same for the target and control groups. In other words, for a given propensity score, exposure to treatment is a randomised experiment and, therefore, the treated and non-treated units should be, on average, observationally identical.

The second condition relates to unconfoundedness, given the propensity score. Suppose that assignment to treatment is unconfounded, i.e.

$$Y_1, Y_0 = D_i \mid X_i$$
$$= D_i \mid p(X_i) \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (3)$$

If assignment to treatment is unconfounded conditional on the variable's pre-treatment, then assignment to treatment is unconfounded given the propensity score. Using Equation 1, the propensity scores are calculated using logistic regression, and the ATT effect is estimated as:

$$ATT = E\,(Y_{1i} - Y_{0i} \mid D_i = 1)$$
$$= E\,(ATE \mid D_i = 1)$$
$$= E\{E(Y_{1i} - Y_{0i} \mid D_i = 1, p(X_i))\}$$
$$= E\{E(Y_{1i} \mid D_i = 1, p(X_i))\} - E[E\{Y_{0i} \mid D_i = 0, p(X_i))\} \mid D_i = 1\} \quad \ldots \quad (4)$$

where

Y_{1i} is the potential outcome if the household is treated and
Y_{0i} is the potential outcome if the household is not treated.

In the sense that *ATT* parameters focus directly on actual treatment participants, they determine the realised gross gain from the welfare programme and can be compared with its costs, helping to decide whether the programme is successful [Heckman, *et al.* (1999)]. However, calculating the effect through *ATT* is not immediately obvious since the propensity score is a continuous variable. To overcome this problem, the literature proposes four different methods: (i) nearest neighbour (NN) matching, (ii) kernel matching, (iii) stratification matching, and (iv) radius matching (RM) [Becker and Ichino (2002)]. This study uses the first three methods.

Following Becker and Ichino (2002), the most straightforward matching method is the NN method where, initially, each treated unit is matched with the controlled unit that has the closest propensity score. The method is usually applied with replacements in the control units. In the second step, the difference in each pair of matched units is computed, and finally the *ATT* is obtained as the average of all these differences. Let *T* be the set of treated units and C the set of control units; Y^T_i and Y^c_j are the observed outcomes of the treated and control units, respectively. If $C(i)$ is a set of treated units matched to the control treated unit i with an estimated PSM value of p_i then:

$$C(i) = min_j \parallel pi - pj \parallel \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (5)$$

The NN method may face the risk of bad matches if the closest neighbour is far away. This can be avoided by imposing a tolerance level on the maximum propensity score distance (radius). The RM method is one form of imposing a common support condition where bad matches can be avoided so that the

matching quality rises. However, if fewer matches can be performed, the variance of the estimates increases [Caliendo and Kopeining (2008); Smith and Todd (2005)]. RM can be shown as:

$$C(i) = \{p_j \mid \| pi - pj \| < r \} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (6)$$

where all the control units with estimated scores fall within a radius r from treated matched p_i. In both the NN and RM measures, the weights w_{ij} are defined as:

$$w_{ij} = \frac{1}{N_i^C} \text{ if.. } j \in C(i) \text{ and .. } w_{ij} - 0. \text{ otherwise}$$

The ATT for both the NN and RM methods is, therefore, as follows:

$$ATT^N = \frac{1}{N^T} \sum_{i \in T} \left[Y_i^T \sum_{j \in C(i)} w_{ij} Y_J^C \right] \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (7)$$

$$ATT^N = \frac{1}{N^T} \sum_{i \in T} \left[Y_i^T - \sum_{i \in T} \sum_{j \in C(i)} w_{ij} Y_J^C \right]$$

$$= \frac{1}{N^T} \sum_{i \in T} Y_i^T - \frac{1}{N^T} \sum_{j \in C} w_j Y_J^C$$

The weights w_j are defined by $w_j = \Sigma_i w_{ij}$. Similarly, variances can be estimated by assuming that weights are fixed and the outcome is assumed to be independent across units.

$$\text{Variance ATT}^N = \frac{1}{(N^T)^2} \left[\sum_{i \in T} Var(Y_i^T) + \sum_{j \in C} Var(w_j)^2 Var(Y_j^C) \right] \quad \ldots \quad (8)$$

$$= \frac{1}{(N^T)^2} \left[N^T Var(Y_i^T) + \sum_{j \in C} (w_j)^2 Var(Y_j^C) \right]$$

$$= \frac{1}{N^T} Var(Y_i^T) + \frac{1}{(N^T)^2} \sum_{j \in C} (w_j)^2 Var(Y_j^C)$$

In the kernel method, all the treated units are matched with the weighted average of all the non-treated units, using the weights that are inversely proportional to the distance between the propensity scores of treated and non-treated units. The ATT is calculated as:

$$\text{ATT}^K = \frac{1}{N^T} \sum_{i \in T} \left\{ Y_i^T - \frac{\Sigma_{j \in C} Y_j^C G\left(\frac{p_j - p_i}{h_n} \right)}{\Sigma_{k \in C} G\left(\frac{p_k - p_i}{h_n} \right)} \right\} \quad \ldots \quad \ldots \quad \ldots \quad (9)$$

$$= \frac{\Sigma_{j \in C} Y_j^C G\left(\frac{p_j - p_i}{h_n}\right)}{\Sigma_{k \in C} G\left(\frac{p_k - p_i}{h_n}\right)}$$

where $G(\cdot)$ is a kernel function and h_n is a bandwidth parameter. The fourth method, the stratification matching method, consists of dividing the range of variation of the propensity score in a set of intervals (strata) such that, within each interval, the treated and non-treated units have the same propensity score on average. This method is also known as interval matching, blocking, and sub-classification [Rosenbaum and Rubin (1983)]. Hence, the q index defines the blocks over intervals of the propensity score; within each block, the programme computes the equation:

$$ATT_q^S = \frac{\Sigma_{i \in I(q)} Y_i^T}{N_q^T} - \frac{\Sigma_{j \in I(q)} Y_j^C}{N_q^C} \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (10)$$

where $I(q)$ is the set of units in block q while $N^T q$ and $N^C q$ are the numbers of treated and control units in block q. The *ATT* in the stratification matching method is, therefore, as follows:

$$ATT^S = \sum_{q=1}^{Q} T_q^S \frac{\Sigma_{i \in I(q)} D_i}{\Sigma_{\forall i} D_i}$$

where the weight of each block is given by the corresponding fraction of treated units and Q is the number of blocks.

The PSM methodology described above is applied to the PPHS 2010 dataset to analyse the impact of the BISP on the welfare of recipient households. Since household welfare is multi-dimensional, the impact is estimated using five indicators: (i) poverty, (ii) food expenditure per capita, (iii) health expenditure per capita, (iv) school enrolment of children of aged 5–14, and (v) employment status of women aged 15–64.

Following the empirical exercise, we estimate the propensity scores on the basis of Equation 1, where the dependent variable is the household's status as a recipient or non-recipient. The right-hand side of equation 1 includes three sets of explanatory variables, i.e., a household's major reasons for wanting assistance: (i) individual characteristics, including the household head's sex, education, and employment status; (ii) household characteristics, including female-to-male ratio, household size, dependency ratio, number of persons per room, land and livestock assets, shocks, and presence of a disabled person in the household; and (iii) regional characteristics, including region and province. Since the dependent variable is dichotomous with two outcomes—received

assistance or did not receive assistance—we apply binary logistic regression to estimate the determinants of receiving assistance while the non-recipient group serves as the reference category. Using the '*psmatch2, pscrore, attnd, attk and atts*' commands in STATA, we compare the treated and non-treated units and calculate the welfare impact.

After calculating the propensity scores, we estimate the *ATT*. In order to make the working sample more comparable, the sample is restricted to those units with probabilities that lie within the region known as the *common support*—the area containing enough control and treatment observations [Dehejia (2005)]. It also means excluding those units where the treated and non-treated units do not have comparable values.

4. AN EVALUATION OF THE BISP

4.1. Criteria for Evaluation of Safety Net Programmes

Any effective social safety net programme needs to fulfil certain criteria [Pasha, et al. (2005); World Bank (2007):

- *Targeting*: the extent to which a programme reaches its intended target population rather than those who do not actually need it.
- *Coverage*: the proportion of the target population that benefits from a programme.
- *Administrative cost*: the proportion of the administrative cost against that used on the benefits.
- *Accessibility*: the ease with which an eligible household can access the programme socially, monetarily, logistically, and administratively.
- *Adequacy*: the sufficiency of the safety net, such as a cash transfer, for it to have any positive effect.
- *Positive incentive effect*: safety nets that provide a positive incentive not only help sustain the programme but also serve to alleviate poverty in the larger context.
- *Sound financing source*: safety nets with well-defined, self-reliant sources are fiscally more sustainable than those relying on ad hoc, external sources.
- *Independence from other transfers*: a transfer taking place under a particular programme should not exclude other transfers, the removal of which may have net negative effects on a household's welfare.

4.2. Households Receiving Assistance in Pakistan

Before we examine the BISP's performance against some of these criteria,[5] let us outline how many households are receiving any cash assistance,

[5]Some of the stated criteria for evaluating social safety net programmes, such as administrative costs and sound financing sources, are macro-level issues and beyond the scope of this study.

and their sources, in the study sample. As reported by respondents in the PPHS 2010 (shown in Table 2), 10.7 percent of households receive cash assistance from a variety of programmes, with no major difference in trends between urban and rural areas. Among these programmes, the BISP is the largest, covering about two thirds of the total households receiving any form of cash transfer in rural and urban areas.

Table 2

Number of Households Receiving Cash Transfers by Type and Region

Type of Assistance	National	Urban	Rural
Total number of households	4142	1342	2800
Households receiving cash transfers from government			
BISP	285	87	198
Food Support Programme	17	5	12
Zakat	19	2	17
Bait-ul-Maal	10	3	7
Food items at subsidized rates	5	3	2
People's Rozgar Programme	7	1	6
Others	29	8	21
Households receiving cash transfers from individuals			
Private zakat	21	8	13
Private ushr	3	1	2
Fitrana/sadqaat	16	7	9
Assistance/gifts in kind	23	8	15
Total number of households receiving cash transfers from any source			
	435	133	302
Percentage of households receiving cash transfers from any source			
	10.71	10.48	10.82

Source: Authors' estimates based on micro-data from PPHS 2010.
Note: The total number of households in the study sample is 4,142.

As can be seen from Table 2, received cash assistance is categorized under two major heads: received from (i) government sources and (ii) individual sources, such that a total of 10.7 percent of households received at least some sort of cash assistance. Table 3 shows that, of this 10.7 percent, a significant proportion (90.5 percent) received assistance from only one source. Only a few households obtained assistance from two or more programmes, i.e., a household may have received assistance through private zakat and also from the Pakistan Bait-ul-Maal.

As shown in Tables 2 and 3, 435 households received assistance from various programmes, while some benefitted from more than one programme. Figure 1 shows that households receiving assistance under the BISP outnumbered those receiving assistance from other public and privately funded safety net initiatives put together. At the national level, 264 households received

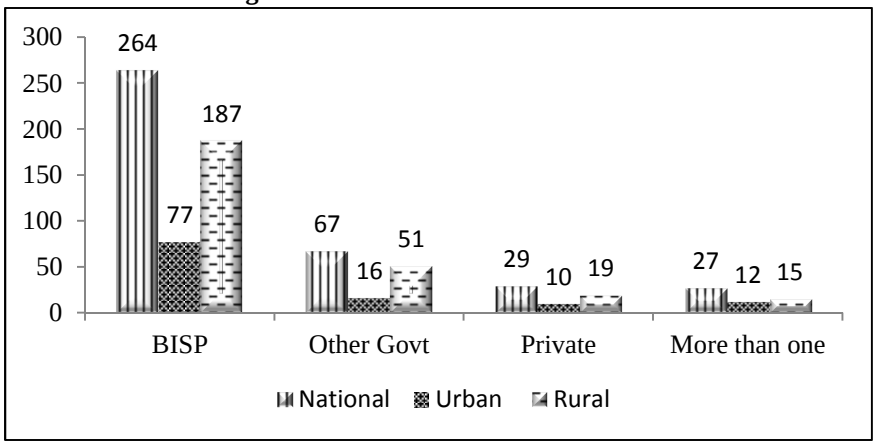
Table 3

Percentage of Households with Number of Cash Transfers

Type(s) of Cash Transfers	National	Urban	Rural
0	90.47	90.94	90.26
1	8.79	8.04	9.13
2	0.52	0.87	0.36
3 and more	0.22	0.16	0.25
All	100.00	100.00	100.00
N	(4,061)	(1,269)	(2,792)

Source: Authors' estimates based on micro-data from PPHS 2010.

Fig. 1. Number of Households by Type of Assistance Received and Region



Source: Authors' estimates based on micro-data from PPHS 2010.

cash transfers under the BISP, 67 households obtained assistance from other state-run safety net programmes, 29 households were assisted by private sources, and 27 households received assistance from multiple sources—a net total of 387 households.

As can be seen from Figure 1, the BISP is the largest safety net programme, covering more than two thirds of the households receiving any form of assistance in the study sample. If it is able to make any reasonable impact on the welfare of the recipient households, its overall effect on the social protection of the poor could be immense. As stated earlier, one of the programmes' key objectives was to help the poorest of the poor against rising inflation by providing for their basic needs since such households have few physical and soft assets with which to cope with any shock.

As the discussion shows, cash transfers from the various programmes are split into three categories: assistance from the BISP, other government

programmes, and private sources. The sample households have also been grouped into three categories: 'received', 'never attempted', and 'attempted'. Table 4 summarises the trends in cash transfers across the four provinces and two regions as reported by the PPHS. The proportion of households that

Table 4

Distribution of Households' Assistance-Receiving Status by Province and Region (%)

Province/Region	Received	Attempted	Never Attempted	Total
	BISP			
National	7.0	16.2	76.8	100.0
Provinces				
Punjab	3.1	7.1	89.9	100.0
Sindh	13.6	30.6	55.8	100.0
KP	4.9	5.4	89.7	100.0
Balochistan	8.5	29.9	61.6	100.0
	Regions			
Rural	7.1	13.8	79.1	100.0
Urban	6.9	21.4	71.8	100.0
	Other Government			
National	2.1	3.1	94.9	100.0
Provinces				
Punjab	2.4	3.6	94.0	100.0
Sindh	2.4	3.2	94.4	100.0
KP	1.6	0.6	97.8	100.0
Balochistan	0.9	3.8	95.3	100.0
Regions				
Rural	2.7	2.8	94.9	100.0
Urban	1.7	3.6	94.7	100.0
	Private			
National	1.2	0.0	98.8	100.0
Provinces				
Punjab	1.2	0.1	98.7	100.0
Sindh	1.7	0.0	98.3	100.0
KP	1.1	0.0	98.9	100.0
Balochistan	0.0	0.0	100.0	100.0
Regions				
Rural	1.0	0.1	98.9	100.0
Urban	1.5	0.0	98.5	100.0

Note: Some figures appear as zeros due to rounding off.
Source: Authors' estimates based on micro-data from PPHS 2010.

received BISP assistance was highest in Sindh (13.6 percent), followed by Balochistan (8.5 percent), KP (4.9 percent), and Punjab (3.1 percent). Across the regions, there is little difference between the proportion of households that received BISP assistance in rural (7.1 percent) and urban (6.9 percent) areas (Table 4). Although it is difficult to explain the somewhat uneven distribution of BISP cash transfers across provinces, more in-depth data is required to assess whether this is a political phenomenon or is due to some other reason. One probable factor is the over-representation of poorer regions—particularly in Sindh and Balochistan—in the PPHS sample. While the sample includes the poorer districts of Badin, Larkana, and Loralai in Sindh and Balochistan, the more urbanised and well-off districts of Karachi, Hyderabad, and Quetta are not represented.

Another interesting factor noted in Table 4 is the proportion of households that fall in the 'attempted' category. About 16 percent of the sampled households at the national level tried to obtain assistance from the BISP but failed. Across the provinces, almost a third of the households in Sindh and Balochistan fall in the 'attempted' category, but this percentage is in single digits in the other two provinces. Similarly, in urban areas, more than a fifth of the households sampled attempted to obtain cash assistance under the BISP. This percentage is smaller in rural areas (14 percent) from which we can infer that urban inhabitants might have made greater attempts due to the availability of better information and accessibility than in rural areas (Table 4). Contrary to the BISP, the percentage distribution for other government programmes and private programmes is much lower and smoother, both for the 'attempted' group and 'received' group, with little variation across the provinces and regions. Private assistance in Balochistan is negligible in both groups (Table 4).

4.3. The BISP's Targeting

For any social safety net programme to be successful, the issue of targeting is of utmost importance. Before the proxy means test (PMT) formula was adopted to identify eligible households, the BISP had a set of seven criteria that a household had to fulfil to be eligible to receive cash assistance under the programme. Since the PPHS 2010 was conducted before the new PMT was introduced, we will evaluate the efficiency of the BISP's targeting on the basis of its initial criteria. These included:

- A monthly income of less than Rs 6,000
- No family member in government service
- Possession of no or less than three acres of agricultural land or up to three marlas' residential property
- Possession of a computerized national identity card
- Should not be a beneficiary of any other support programme

- Should not hold an account with a foreign bank
- Should not possess a passport or an overseas Pakistani identity card

We use a crosscheck evaluation on the basis of the information in the PPHS dataset on two indicators: landholdings and assistance obtained from other government sources. The BISP criteria show that an eligible household should possess less than three acres of land. However, Table 5 shows that about 10.5 percent of households that received BISP assistance owned between three to ten acres of land, and another 5.6 percent owned ten acres or more, thus yielding a total of 16.1 percent that were ineligible if the stated criteria were strictly applied. The criteria seem to have been followed most strictly in Punjab, and least so in KP (Table 5). The crosscheck analysis also shows that 12 BISP-recipient households (approximately 4 percent) also received assistance from other government sources, violating the conditions set forth by the BISP design (Table 5).

Table 5

BISP Targeting: Compliance with Landholding and Multi-Source Assistance Criteria

Criteria	National	Punjab	Sindh	KP	Balochistan
Eligibility Criteria 1: Land ownership					
No land	73.0	79.2	72.2	61.3	73.7
Small landholding (< 3 acre)	10.9	18.9	10.8	22.6	10.5
Medium landholding (3 to < 10 acres)	10.5	1.9	11.3	12.9	2.6
Large landholding (> 10 acres)	5.6	0.0	5.7	3.2	13.2
Total	100	100	100	100	100
N	285	55	161	31	38
Eligibility Criteria 2: Not receiving cash from other government sources					
Number of households	12	4	5	2	1

Source: Authors' estimates based on micro-data from PPHS 2010.

Along with comparing the recipient households against the BISP's prescribed criteria, another way of evaluating the programme's targeting is to examine the socio-demographic and economic characteristics of BISP recipient and non-recipient households. Table 6 shows that recipient households were, on average, larger, that their household heads were less educated, and less likely to be employed than those in the 'never attempted' and 'attempted' groups. Households receiving cash assistance were comparatively more asset-deprived than the 'never attempted' and 'attempted' group since recipient households had fewer assets, including houses, landholdings, and livestock. Two broad conclusions can be drawn from Table 6. First, recipient households are at a disadvantage compared to the 'never attempted' and 'attempted' group. Second, the 'attempted' group, though better off than the 'received' group, is also underprivileged and has much lower socioeconomic characteristics than the 'never attempted' group. Other studies on Pakistan have shown similar results [Arif (2006)].

Table 6

BISP Targeting: Socioeconomic Characteristics of Households by Status of Assistance

Characteristics[1]	Never Attempted	Received	Attempted
Household size (number)	7.5	8.0	7.8
Education of head (average years)	3.9	2.7	3.1
Head employed (%)	79.0	76.5	82.1
HH has faced a shock in last 5 years (%)	86.4	80.9	86.6
Disabled person in home (%)	3.8	4.0	5.7
Household in debt (%)	23.5	34.0	38.1
Not owned house (%)	8.5	10.1	12.0
Kachha house (%)	61.3	75.5	70.9
Persons per room (number)	3.7	4.3	4.4
Large animal (number)	1.6	1.2	1.0
Small animal (number)	1.5	1.8	1.4
Land owned (acres)	3.5	2.1	2.0

Source: Authors' estimates based on micro-data from PPHS 2010.

Note: (1) Numbers represent average numbers and percentages the proportion of each characteristic in the three stated categories, respectively.

A deeper insight into who receives BISP cash transfers, who unsuccessfully attempts to obtain them, and who neither receives nor attempts to obtain them will help us evaluate the BISP *vis-à-vis* its targeting efficiency. Table 7 presents the status of households with different socio-demographic and economic characteristics by status of received assistance. Based on the PPHS 2010 dataset, these characteristics have been grouped at the individual level, related to the household heads; and at the household level, by family size, dependency ratio, presence of a disabled person at home, room availability, ownership of land and livestock, and experience of natural shocks.

As the table shows, the household head's sex is related to the status of received assistance. Female-headed households have a higher rate of receiving BISP assistance than male-headed households. Also worth noting is the much higher percentage of those households which, while not recipients of BISP cash transfers, do attempt to obtain them, reflecting overall public interest in the programme (Table 7). The education of the household head has a negative association with receiving BISP assistance, since households headed by better-educated persons are less likely to obtain assistance from the BISP. A similar trend prevails among the 'attempted' group, with fewer educated household heads attempting to obtain BISP cash assistance (Table 7).

A household's demographic, health, and risk characteristics are also closely related to its assistance-receiving status (Table 7). With rising dependency ratios, more households are found to be receiving BISP assistance, with an even higher proportion attempting to obtain it. Households with a permanently disabled person or those that experienced a shock in the five years

preceding the survey do not show any definitive trend in receiving BISP assistance. However, they do show high rates among those attempting to obtain cash assistance (Table 7), which could reflect the general accessibility of the programme and people's expectations of it.

Table 7

Receiving Status of BISP Assistance by Socioeconomic Characteristics of Households (%)

Characteristics	Never Attempted	Received	Attempted	Total
Sex of the household head				
Male	76.7	6.8	16.5	100.0
Female	71.7	13.8	14.5	100.0
Education of household head				
Illiterate	74.4	7.9	17.6	100.0
1-5	70.5	9.7	19.8	100.0
6-10	83.1	4.0	12.9	100.0
11+	84.3	4.1	11.6	100.0
Dependency ratio by category				
Low	78.7	6.9	14.4	100.0
Medium	76.7	7.0	16.3	100.0
High	72.6	7.4	20.0	100.0
Presence of permanently disabled person at home				
No	76.9	7.2	15.9	100.0
Yes	70.6	6.9	22.5	100.0
Experienced shock in the last 5 years				
No	74.6	9.8	15.6	100.0
Yes	76.9	6.7	16.4	100.0
Persons per room				
Up to 2 person in a room	84.7	4.6	10.7	100.0
>2 to 3 person in a room	79.9	5.7	14.4	100.0
>3 and above	70.7	8.8	20.5	100.0
Debt status				
No	80.4	6.2	13.4	100.0
Yes	68.4	8.8	22.7	100.0
Land ownership by category				
No land	74.2	7.6	18.2	100.0
Up to 3 acres	78.9	6.8	14.3	100.0
3< to 10 acres	81.7	5.7	12.6	100.0
10< acres	84.8	4.9	10.4	100.0
Livestock (large animals only)				
No animal	73.9	7.4	18.7	100.0
1/2 animals	77.6	7.2	15.2	100.0
3/5 animals	84.4	6.1	9.5	100.0
6 and above animals	93.5	3.3	3.3	100.0
Farm households (rural area only)				
Owns land	81.2	6.0	12.8	100.0
Sharecropper	58.4	12.0	29.7	100.0

Source: Authors' estimates based on micro-data from PPHS 2010.

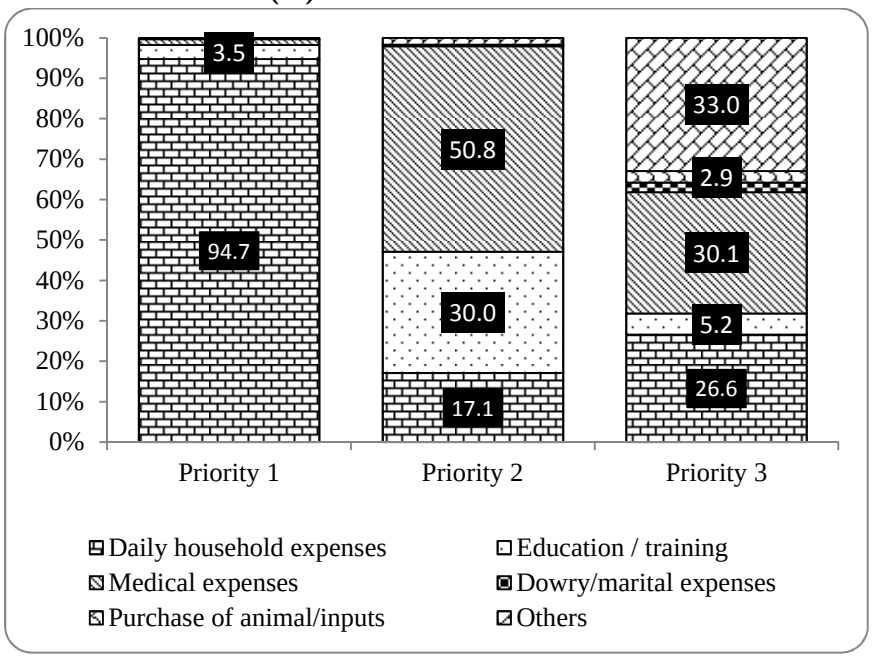
Land and livestock ownership also indicate the expected trend in receiving and attempting to obtain BISP (Table 7)—households with fewer animals and smaller landholdings are more likely to benefit from the programme. Similarly, 'persons per room' also has a positive association with the 'received' and 'attempted' group. In rural areas, sharecropping households have a much higher proportion of receiving and attempting to obtain rates for BISP cash assistance than those who own land (Table 7). There is a clear relationship between a household's socioeconomic characteristics and its status of BISP assistance received. Also worth noting is the similarity in patterns between the 'received' group and 'attempted' group. This supports the findings presented in Table 3, which showed that the 'attempted' group also comprised vulnerable, though slightly better off, households. These findings suggest a generally effective design formulation and targeting by the BISP initiative, which probably needs further coverage to include those eligible households that fall in the 'attempt' group identified in this study.

4.4. BISP's Role in Household Budgets

As mentioned earlier, the BISP is the largest social safety net programme operating in Pakistan at present, and was initiated to protect the poorest of the poor from rising inflation. The question of the *adequacy* of the transferred amount to recipient households is an important factor in evaluating its effectiveness. Needless to say, cash assistance of Rs 1,000 per household per month is not a life-changing amount, but it is a reasonable enough sum to help a poor household cover some of its basic needs. It would therefore be interesting to know what people spend the BISP cash transfer on. The PPHS 2010 asked households to report the top three items on which they spent the cash transfers they received (Figure 2).

Figure 2 shows that, of the set of priorities, about 95 percent of households reported that they had spent the BISP transfer to meet daily household expenses, followed by 3.5 percent who had spent the sum on education, 1.4 percent on medical expenses, and 0.35 percent on dowries. In the second set of priorities, more than half the households spent the cash on medical expenses, followed by education (30 percent), and daily household expenditures (17 percent). In the third set of priorities, 33 percent of households reported spending the BISP money on miscellaneous expenditures, followed by 30 percent on medical expenses, and 27 percent on daily household expenses. The first two priorities reported by households suggest that daily household expenditures and medical expenses are their main concerns. With the exception of some cash utilisation on education, it would not be wrong to infer that the BISP cash transfer is not primarily used to build assets for the household, be they soft assets such as education and skill development, or physical assets such as the purchase of livestock or agricultural inputs.

Fig. 2. Spending of BISP Cash by Priority and Purpose by Recipient Households (%)



Source: Authors' estimates based on micro-data from PPHS 2010.

4.5. BISP and Poverty Dynamics

The PPHS 2010 dataset includes detailed consumption modules covering all aspects of consumption, including food and non-food items, and sufficient information to calculate head-count poverty. It is therefore possible to evaluate the relationship between the BISP and other forms of assistance and households' consumption expenditures and poverty. For a detailed analysis, we split per capita total expenditure into food and non-food expenditures. As can be seen in Table 8, the results are quite interesting. Both food and non-food expenditures in terms of average per capita are higher among the 'never attempted' group than among the 'received' and 'attempted' groups. The 'never attempted' group is thus comparatively better off and does not need assistance. However, the 'received' group has, on average, more per capita food and non-food expenditures than the 'attempted' group (Table 8). These findings suggest that the former's higher expenditures are a result of the safety net interventions made to enhance the vulnerable population's welfare level. Since poor households spend a major proportion of their expenditure on essential items such as food (Figure 2), the 'received' group's expenditure on these commodities is higher than that of the 'attempted' group.

Table 8

Average per Capita Monthly Expenditures and Expenditures by Quintile by Status of Received BISP Assistance

Expenditure	Never Attempted	Received	Attempted
Per capita monthly expenditure on (Rs)			
Food	1752.3	1602.8	1534.1
Non-food	1312.2	991.8	931.4
Total	3105.2	2615.7	2478.5
Per capita monthly expenditure by quintile (%)			
First	69.3	7.9	22.8
Second	74.7	7.6	17.8
Third	76.3	6.3	17.5
Fourth	77.4	8.4	14.2
Fifth	84.1	5.2	10.7
Poverty level[1] (%)			
	18.2	25.2	27.2

Source: Authors' estimates based on micro-data from PPHS 2010.
Note: (1) Measured using headcount method at Rs 1,671.89 per adult per month.

The quintile-based analysis in Table 8 suggests that, as we move up the quintile ladder, fewer households are receive, or attempt to obtain, any form of cash assistance. It is, however, worth noting the substantial proportion of richer households that receive BISP cash assistance, raising doubts about its targeting efficiency. Some of these initial issues are said to be dealt with by the new criteria for selection of beneficiaries by the BISP (given in the discussion above) and it will be interesting to see what impact they have on the ground (measured by a dataset) subsequent to these amendments.

A somewhat similar picture emerges when we look at the figures for absolute poverty and BISP cash received in Table 8. As expected, poverty is lower among households who have never attempted to obtain BISP cash assistance. However, if we look at poverty levels among those who receive and those who have attempted to obtain BISP cash assistance, we see a trend that needs explanation. Poverty levels among BISP recipients are slightly lower than those among non-BISP recipients who have attempted to obtain it (Table 8). Is the BISP cash assistance helping its recipients move out of poverty in some cases? The answer is arguably yes, since, if nothing else, it has helped improve recipient households' food expenditure (Figure 2), which eventually matters for the headcount measure of poverty.

As noted earlier, the PPHS dataset (2001, 2004, and 2010) comprises three waves, but only for rural Punjab and Sindh. On the basis of these panel households, we build four categories of poverty dynamics to observe the association between households' poverty movements and their status of received BISP cash transfers. These categories are: (i) poor in all three periods (chronically poor), (ii) poor in two periods, (iii) poor in one period, and (iv) never poor. Table 9 presents the association between poverty dynamics and the

status of received BISP assistance, as found in the PRHS/PPHS. As the table shows, the 'never attempted' group has two features. First, two thirds of the 'chronically poor' have never attempted to gain BISP assistance; second, a substantial proportion of the 'never poor' have received BISP cash transfers or attempted to obtain it. It is, however, significant to note that, generally, a larger proportion of households either receive BISP cash assistance or attempt to do so as the chronic nature of poverty increases. Looking at the trends in poverty dynamics and the BISP in Table 9, the behaviour of the 'attempted' group—with its high efforts to obtain assistance among those experiencing poverty, especially the chronically poor—suggests a need to expand the programme and improve its targeting strategy.

Table 9

Status of Current Received Cash Assistance and Poverty Dynamics (2001, 2004, 2010)[1]

Category	Never Attempted	Received	Attempted	Total
Poor in 3 periods	66.7	6.7	26.7	100.0
Poor in 2 periods	64.0	9.9	26.1	100.0
Poor in 1 period	72.3	10.6	17.1	100.0
Non-poor in 3 periods	83.0	7.6	9.5	100.0

Source: Authors' estimates based on micro-data from PRHS 2001, PRHS 2004, and PPHS 2010.
Note: (1) Only rural Punjab and Sindh are included in this part of the analysis since they are the only regions where all three rounds of the panel survey were conducted.

4.6. The Impact of the BISP: A PSM Analysis

As noted earlier in Section 3, we applied the PSM method to the PPHS 2010 dataset to analyse the impact of the BISP on household welfare. The welfare impact of the BISP is estimated against five household indicators: household poverty level, per capita food expenditure, per capita health expenditure, school enrolment of children aged 5–14 years, and employment status of women aged 15–64 years.[6] The propensity scores are estimated using logistic regression to calculate the ATT, for which two conditions must be met: balancing and unconfoundedness.

Table 10 presents the results for the determinants of the BISP by incorporating the correlates for which both these conditions are satisfied. The

[6] These five indicators were formed using the PPHS 2010 dataset. Headcount poverty was calculated by applying the official poverty line at Rs 1,671.89 per adult per month. Monthly per capita food and health expenditures were calculated from the survey's consumption and health modules. The PPHS's education module contains detailed information on the enrolment status of everyone in the household (used to calculate the enrolment status of children aged 5–14). The working status of the sampled women was estimated based on the PPHS question, "Did you work during the last week at least for one hour for any wage or profitable home activities?"

dependent variable is binary, that is, whether the household has received assistance or not. The small p-value from the logistic regression shows that at least one of the regression coefficients is not equal to zero. Although the pseudo-R^2 term does not equate to the R^2 in OLS, the model shows a significant pseudo-R^2. As can be seen from Table 10, we have added three sets of independent variables to the model: household head, household, and region. The results of the logistic regression show that female-headed households are more likely to receive BISP assistance than male-headed households. The education of the household head has a significant negative association with the likelihood of receiving BISP cash transfers. A household is also less likely to obtain BISP cash assistance if the household head is employed. Among the second set of characteristics, we see that the higher the female-to-male ratio and household size, the higher the chances of receiving BISP assistance (Table 10).

Table 10

Determinants of BISP Cash Transfers: Logistic Regression

Covariates	Coefficients	Standard Error
Sex of household head (female = 1)	–0.629*	0.307
Education of household head (years)	–0.031**	0.016
Work status of head (yes = 1)	–0.232	0.178
Female-to- male ratio	0.177*	0.069
Household size (number)	0.028**	0.017
Dependency ratio	–0.144	0.090
Unexpected shock (yes = 1)	0.459*	0.173
Loan obtained last year (yes = 1)	–	–
Presence of disabled person (yes = 1)	–0.132	0.334
Number of rooms per person	–0.066**	0.035
Land ownership (acres)	–0.015	0.011
Total large animals	–0.017	0.032
Total small animals	0.021	0.016
Region (urban = 1)	0.036	0.160
Province (Punjab as ref.)		
Sindh	1.379*	0.178
KP	0.672*	0.258
Balochistan	1.288*	0.244
Constant	–2.521*	0.391
LR chi2	205.24 (19)	
Log likelihood	–873.82	
Prob > chi2	0.0000	
Pseudo-R^2	0.1051	
N	3762	

Source: Authors' estimates based on micro-data from PRHS 2001, PRHS 2004, and PPHS 2010.

As can be seen from Table 10, households who had faced an unexpected shock in the five years preceding the survey were more likely to have received BISP assistance than those who had not. The presence of a permanently disabled person at home and characteristics related to asset ownership, such as land and livestock, however, had no impact on receiving cash assistance from the BISP. Among the third set of independent variables, the region coefficient is not significant, although a significant variation in BISP cash transfers prevails across the provinces, with households in Sindh and Balochistan more likely to receive BISP assistance than those in Punjab.

This brings us to the final stage of the PSM analysis results, which are presented in Table 11. The table shows the estimated welfare impact of the BISP in terms of ATT against the five key indicators of household welfare. The bootstrapped standard error and number of matching cases treated and size of the control group are also given in Table 11. The results show that the impact of the BISP on headcount poverty, though statistically not significant, is negative for all three measures of PSM. Despite its reasonable targeting efficiency (as shown in the preceding discussion), the programme's statistically insignificant impact on poverty unsurprising. The rationale of the BISP initiative suggests that it has not been designed to reduce poverty per se, since its main objective is to protect the poorest of the poor against inflationary shocks. The criterion of the BISP suggests that recipient households be among the marginalised segments of society and far below the poverty line. Although these households receive a monthly stipend of Rs 1,000, the amount is too low to pull households out of poverty. The fact that they are, on average, larger households, have higher dependency ratios, tilted female-to-male ratios, and fewer liquid, soft, and physical assets make it difficult for them to move out of poverty through small cash transfers such as those that the BISP provides.

The impact of BISP cash transfers on per capita food and health expenditure is statistically significant (Table 11). Under the various measures of PSM, BISP-covered households are likely to spend more on food and health than those who have not received assistance but have similar socioeconomic and demographic characteristics. The calculated welfare impact of the BISP transfer on food is Rs 81.4 by the kernel method, Rs 78.4 by the stratification method, and Rs 94.4 by the NN method (Table 11). The welfare impact on health expenditure shows that households who have received assistance from the BISP are likely to spend Rs 54.2 more on health under the stratification method and Rs 66.6 more under the NN method when compared to those who have not received BISP assistance (Table 11). These results support the findings presented in Figure 2, which shows that the majority of BISP recipient households spend their cash transfers on daily household and medical expenses. These findings conform to studies done on other parts of the world, where such cash transfers have been found to improve the nutrition and health status of recipients [Duflo (2003); Aguero, *et al.* (2007); Paxson and Shady (2007); Cunha (2010)].

Table 11

ATT of BISP Under Various Measures of PSM and Household Socioeconomic Indicators

Method	Poverty (yes = 1)	Food Expenditure per Capita (Monthly)	Health Expenditure per Capita (Monthly)	School Enrolment of Children (Aged 5–14) (yes = 1)	Employment Status of Women (Aged 15–64) (yes = 1)
NN method					
ATT	–0.030	94.349	66.631	0.150	0.095
N. Treated	272	272	272	272	272
N. Control	248	248	248	182	248
St. error bootstrap	0.044	51.177	40.225	0.128	0.075
t-stat	–0.686	1.84	1.66	1.17	1.275
Kernel method					
ATT	–0.010	81.349	57.466	0.100	0.121
N. Treated	272	272	272	272	272
N. Control	3209	3209	3209	3209	3209
St. error bootstrap	0.024	48.966	32.215	0.086	0.07
t-stat	–0.395	1.66	1.78	1.16	1.61
Stratification method					
ATT	–0.002	78.349	54.221	0.12	0.121
N. Treated	272	272	272	272	272
N. Control	3209	3209	3209	3209	3209
St. error bootstrap	0.027	47.331	31.997	0.158	0.074
t-stat	–0.083	1.66	1.69	0.76	1.63

Source: Authors' estimates based on micro-data from PPHS 2010.

The welfare impact of BISP cash transfers on children's school enrolment and women's participation in the labour market is positive, if not statistically significant (Table 11). Households receiving BISP cash assistance are on the threshold of survival and thus spend the amount received to fulfil basic necessities, mainly food, rather than investing it to better their physical or human capital. Other supplementary programmes of the BISP related to skill development, employment, and education may have a positive impact on indicators other than food, the analysis of which, as mentioned earlier, is beyond the scope of this study.

5. CONCLUSIONS AND POLICY RECOMMENDATIONS

The BISP might not be the 'magic bullet' needed to alleviate poverty, but our findings suggest that it has been provided some measure of relief to recipient households as far as food and health expenditures are concerned. In the programme's defence, the rationale behind the initiative was to provide assistance to the 'poorest of the poor' in the face of rising food and fuel prices and not to alleviate poverty per se. In the four years since its inception, the BISP has demonstrated its ability to evolve by changing its criteria for selecting recipient households and shifting from parliamentarians' recommendations to PMT scores,

and by adopting technology to deliver cash through Smart Cards and phone-to-phone banking instead of relying on manual transfers through post offices.

For any social protection programme to be effective, it should be able to reach the poor and promote a permanent exit from poverty. This study shows that, although not all poor households are covered by the programme, such as those who have unsuccessfully attempted to obtain BISP assistance, those who do receive assistance are mostly poor (with a few exceptions where the set criteria were not met, indicating leakages to richer households). This ability to reach the poor is not, however, matched by the programme's capacity to encourage households to exit from poverty. The original BISP design, with its unconditional cash transfers, does not demand that households make an effort to invest in their human or physical capital, which would otherwise help them transition out of poverty. With the subsequent incorporation of other schemes under the BISP banner, including the *Waseela-e-Haq*, *Waseela-e-Taleem*, *Waseela-e-Sehat*, and *Waseela-e-Rozgar*, this shortcoming may well have been addressed, although its analysis is beyond the scope of this paper.

High-level political support is a prerequisite of any such programme to be successful. As discussed earlier, reasons linked to the political economy may or may not encourage a government to invest in such social protection schemes. Allocation such as the current Rs 122 billion for the BISP cash transfer programme is a huge promise that future governments may not be willing to make. Other political parties might not consider the programme's political connotations desirable.[7] The slightly lower rates for BISP beneficiaries in the opposition-ruled province of Punjab hint at such issues that the programme may face in case of a political change at the federal level.

Despite approval from the World Bank on its performance and even being labelled "an island of transparency" [Tahir (2012)], the BISP needs to take certain factors into account. The most important of these relates to fostering inter-agency/programme coordination. As we saw in Table 1, a number of safety net programmes exist in the country, catering to different segments of the population. As noted by Heltberg and del Ninno (2006: 8), these programmes are, however, 'fragmented, duplicative and sometimes ceremonial', and do not fulfil recipients' needs. There is thus a need to streamline all the existing programmes and develop synergies among them for a more effective impact. With its extensive data gathered for the PMT scores, the BISP could share information with other programmes for more efficient service delivery. This would also help counter multiple payments to the same beneficiaries under different programmes. A centralised system could also be considered to avoid duplication and for the more stringent application of eligibility criteria.

[7] The BISP is named after Benazir Bhutto, twice prime minister of Pakistan and chairperson of the Pakistan People's Party till the day she was assassinated in December 2007.

Proper monitoring and supervision need to be guaranteed to maintain the programme's credibility. A well-defined assessment procedure should be put in place to judge the adequacy of BISP cash transfers. Is the assistance amount sufficient to make a reasonable impact on the recipient household's budget? A cash transfer of Rs 1,000 per month per household may have been enough in 2008, but will it suffice in years to come? This needs to be assessed periodically.

Another factor ignored in the BISP design is the transitory nature of poverty. A household above the poverty line could move below it and vice versa in the face of changing circumstances. The BISP cash transfer should, therefore, take into account not just the poverty status of a household but also its dynamics vis-à-vis poverty. A recipient household could become ineligible due to poverty dynamics while an ineligible household could become eligible. Such changes need to be taken into account by the BISP design for the more rational and equitable distribution of cash assistance.

Finally, the BISP needs to formally incorporate a mechanism for households to graduate out of poverty. Helping households exit the poverty trap should be the programme's aim instead of continuous cash assistance. Making households economically stable and sustainable should be any social protection programme's goal and the BISP should be no exception.

ANNEXURE

Table A-1 shows the sample size of all three rounds of the panel survey. It also includes the split households covered in both the 2004 and 2010 rounds, building on the basic sample selected in the 2001 round. The PPHS 2010 covered 2,198 panel households from all four provinces. With the addition of 602 split households, the rural sample comprises 2,800 households and the urban sample comprises 1,342 households, yielding a total sample size of 4,142 households.

Table A-1

Households Covered by Three Waves of Panel Survey

		PRHS 2004			PPHS 2010				
Area	PRHS 2001	Panel Households	Split Households	Total	Panel Households	Split Households	Total Rural Households	Urban Households	Total Sample
Pakistan	2721	1614	293	1907	2198	602	2800	1342	4142
Punjab	1071	933	146	1079	893	328	1221	657	1878
Sindh	808	681	147	828	663	189	852	359	1211
KP	447	–	–	–	377	58	435	166	601
Balochistan	395	–	–	–	265	27	292	160	452

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