Working paper

International Growth Centre

Cash versus Kind

Understanding the Preferences of the Bicycle-Programme Beneficiaries in Bihar

Maitreesh Ghatak
Chinmaya Kumar
Sandip Mitra

July 2013

DIRECTED BY
LSE
UNIVERSITY OF OXFORD

FUNDED BY
UKaid
from the British people

Cash versus Kind: Understanding the Preferences of the Bicycle-Programme Beneficiaries in Bihar

Maitreesh Ghatak, London School of Economics (m.ghatak@lse.ac.uk)

Chinmaya Kumar, IGC India-Bihar (chinmaya.kumar@theigc.org)

Sandip Mitra, ISI, Kolkata (sandipisi@gmail.com)

July 3, 2013.

1. Introduction

In the last few decades, there has been a growing interest in the use of cash transfer (CT) programmes as a policy tool to achieve a wide range of developmental goals, in contrast to directly provision by the government. While Latin American countries such as Mexico and Brazil are considered pioneers in this area, the CT approach is also becoming increasingly popular in Sub-Saharan Africa and South Asia. The Government of India (GoI) has recently launched the 'Direct Benefit Transfer' (DBT) that aims to reduce the leakages in various welfare programmes by directly transferring the benefits to the beneficiaries' account. As of now, the GoI has started implementing the DBT only for scholarships, pensions and similar social security programmes. However, there is a possibility that other important welfare programmes where the benefits are currently being transferred in kind -– such as Kerosene, LPG, and Food Grains – will be eventually replaced with a CT programme.

The government's plan to replace some of the in-kind transfer (IKT) programmes – which also includes the public distribution system (PDS), with a CT programme has been fiercely debated. The proponents of the CT approach (eg. Kapur et al, 2008) argue that most IKTs have failed to deliver simply because their implementation requires active involvement of the public administration, which is generally unaccountable to people and is marked with weak capabilities at the local level. In addition, other criticisms against IKTs include various forms of corruption and leakage, supply of substandard quality, and to the extent local governments are involved, political bias in distribution. The supporters of IKTs, on the other hand, point out a large number of disadvantages inherent in a CT programme–misuse of money, price fluctuations in the underdeveloped rural markets, greater vulnerability of women and elderly --and argue that reforming the existing programme is a more sensible approach than replacing it completely with a CT programme (Khera, 2011; Ghosh, 2011; Shah 2008). This debate has been very useful in bringing up a wide range of issues that needs to be considered while assessing the relative effectiveness of different ways of transferring benefits. However, it is also becoming increasingly polarized, and the tendency to argue either for or against the cash transfers has diverted our attention away from understanding the reasons as to why a particular transfer programme works or fails in a given context.

In order to make progress, several steps are needed. First, we need to work towards developing an analytical framework that helps us systematically explore how various forms of transferring benefits interact with a wide range of household and community-level factors to determine the outcomes we observe.

Second, we have very little empirical evidence on the performance of a cash transfer programme which replaces an existing in-kind transfer programme. The empirical basis for the arguments for or against the cash transfer programmes have generally been based on the performance of the existing IKTs: poor functioning of an IKTs over a long time is seen as an evidence in favour of the CTs; however, an improvement in the performance of a IKTs due to better design, or general improvement in governance, is used to argue against the need for CTs to replace IKTs. It is partly because there are very few cases where an IKT programme has been replaced by a CT programme. Nevertheless, some of the Indian states have tried CTs recently – in some cases, only a pilot if not a universal programme – and therefore it would be very useful to assess the performance of these programmes.

Third, we need to study beneficiaries' preference between different forms of transfers -- unconditional cash transfers (UCT), conditional cash transfers (CCT), and IKTs -- for different types of goods and services to identify factors that play an important role in shaping their preference regarding the form in which they would like to receive benefits from the government. This information would be very useful in designing transfer programmes in a way that responds to people's need. For example, areas where market access is not easy, CTs are not going to be very effective. In contrast, in areas where the administrative capacity is weak and there is limited accountability (say, by the media or local government bodies), CTs may be a good way of empowering the beneficiaries.

This paper attempts to fill some of these gaps by studying the performance of a conditional cash transfer scheme in the Indian state of Bihar, called *Mukhyamantri Cycle Yojna* (Chief Minister's Bicycle Programme), which provides money to purchase a bicycle to every student who is enrolled in standard nine of a government run/aided school. We conducted a household survey among the beneficiaries of this programme to answer the following questions:

1. How has this programme performed in terms transferring the benefits to the eligible beneficiaries?
2. Whether the money received under this programme was utilized by the beneficiaries to purchase a bicycle?
3. What are the factors that determine whether the beneficiaries use the programme money to purchase a bicycle?
4. Whether the beneficiaries prefer receiving a bicycle instead of cash? What are the determinants of beneficiaries' preference for cash versus kind?

Section 2 provides details of the survey design and provides a brief introduction to the bicycle programme. Section 3 presents the main findings related to performance of the programme and determinants of beneficiaries' preference for cash versus kind. Section 4 discusses the theoretical implications of the key results. Section 5 concludes.

2. Survey Design and details of the Bicycle Programme

The primary survey was conducted in 36 villages, spread across six districts of Bihar, during September-October, 2012. Multistage sampling technique was adopted to select the districts, villages and households. The district level HDI scores were used to divide all districts of Bihar into three groups: 1. High HDI Districts; 2. Medium HDI Districts; 3. Low HDI Districts. Two districts were randomly selected from each category for the survey. The selected districts were: Muzaffarpur and Lakhisarai (High HDI); Sheikhpura and Banka (Medium HDI); Araria and West Champaran (Low HDI).

Probability proportional to size (PPS) method was used to decide the number of villages in each group using the list of villages available from the census data[1]. The number of villages turned out to be 14, 7 and 15for Group 1, Group 2, and Group 3 respectively.The villages were randomly selected from the complete list of villages from each group.

At the village level, in order to identify beneficiary households of the bicycle scheme, we first conducted a survey of all the households (household listing) by administering a short questionnaire. From the household listing, we identified the beneficiaries of the *Mukhyamatri Cycle Yojana* (chief minister's bicycle programme) in every village and the sample for the main household survey was drawn from these beneficiaries using random sampling (without replacement). Our original plan was to survey 900 households from the selected 36 villages, where the number of households in each village would be decided by the PPS method[2]. However, the actual sample size ended up to be only 840 because most villages in one of the districts--West Champaran-- did not have enough beneficiaries of the bicycleprogramme.

Table A1 in the appendix provides the key socio-economic characteristics of the sample. Most household heads are engaged in either agriculture (35 %) or work as casual labourer (39 %); only 13 percent of them have salaried employment. The literacy rate for the household heads is 63 percent and their average years of education are only 5 years. 35 percent of the households live in a *kucha* house and nearly half (48.3 %) of all households belong to the official BPL category. Thirteen percent of the households have more than one beneficiary of the bicycle programme and therefore for 840 households in the sample we have 958 beneficiaries.

[1]We did not impose any constraint based on regional population; the number of villages for each group was decided based on total number of villages in each group as per the census data.

[2]PPS method gave us number of households to be selected from each village based on total number of households in each village.

2.2 The Bicycle Programme: a brief introduction

This programme was launched in 2006 for all the girls enrolled in standard 9th in a government school. Under this scheme, the eligible students were provided Rs 2,000 in cash to buy a bicycle. In 2009-10, the boys were also included under the scheme and the money per student has been increased to Rs 2,500 from academic year 2011-12. From the academic year 2012-13, the government has also imposed an additional conditionality: only children with at least 75 per cent attendance would receive money for the bicycle.

All the schools, all over the state, are asked to prepare a list of class 9th students based on the school enrolment register till the 31st of May every year (The new academic session starts in the month of April every year). This list is sent to the district officials who are supposed to transfer the required amount of money to the school by the end of September (though in reality it is often delayed by several months).

The school officials, after receiving the money from treasury, announce a day for distribution of money among the eligible students. The distribution of money should be ideally finished within a day but it is generally done in 2-3 phases. The school authorities also need to ensure that the students who have received money under the scheme submit a receipt, which is seen as evidence that the student has actually bought a bicycle.

3. Results

3.1Basic Results

We first look at some of the indicators to assess whether the survey data confirms the popular perception that this program has been a success.

3.1.1Exclusion of eligible beneficiaries: An important indicator of the performance of any transfer program is whether the benefits reach the intended beneficiaries. During the village census, we identified households who were likely to benefit from the bicycle programme (households with a child that attended a government high school between 2007-12) and asked them whether they benefitted from this scheme, and if not, what was the reason for it. Table 1 below shows that only 75 percent of the potential beneficiaries benefitted from the programme. However, this doesn't imply that a quarter of the eligible beneficiaries were denied benefits. When we look at the reasons why some of them did not benefit under this programme, we find that most of them did not benefit due to valid reasons (scheme was only for girls till 2008, enrolled in standard nine at the time of survey etc). The data reveals that only 3 percent of the total beneficiaries reported not having benefiteddespite meeting the eligibility criteria. Thus, this suggests that this program has done remarkably well in terms of covering the beneficiaries who meet the eligibility criteria.

Table 1: Exclusion of Beneficiaries

Categories	Numbers	Percentage
Total number of potential beneficiaries	1585	
Number of actual beneficiaries	1201	75.77
Did not benefit	384	24.23
-----because of valid reasons	270	
----- despite meeting the eligibility criteria	40	
------ did not respond [3]	74	
Percentage of beneficiary excluded		3.22

3.1.2 Corruption: There are four main channels through which the money being spent under this programme can be potentially siphoned off by different actors. First, the enrolment figures can be inflated by school authorities by adding 'ghost beneficiaries' and the money received against these beneficiaries can be pocketed by them. Second, the potential beneficiaries can also enrol themselves in multiple schools so that they receive money under this program more than once. Third, the school authorities can transfer less than the amount of money that the beneficiaries are entitled to receive. Fourth, the school authorities can provide coupons/bicycles to the beneficiaries instead of money (although it is illegal, but school authorities may do this if they don't expect to be caught) and perhaps earn a commission from the bicycle stores that provide the bicycles to school or accept coupons issued by the school[4].

While we don't have data on the first two forms of corruption, our data can give us some idea about extent of corruption through the last two channels.

The data on the amount of money received under this program reveals that 93.3 per cent of the beneficiaries received the right amount of money (Table 2). This clearly means that it is very difficult for school authorities to make money by denying the eligible beneficiaries the amount they are entitled to receive. In Table 3 we explore whether there is any variation across districts and find that districts with low HDI has higher percentage of beneficiaries that receive less than the entitled amount.

[3]We do not know the reason for the non-response. If we assume that all those who did not respond actually did not benefit despite being eligible, the exclusion rate would be 8 percent.

[4] It is possible that providing benefits in the form of coupons/bicycles doesn't necessarily mean corruption. However, the likelihood of corruption increases not only because there is greater scope for it, but it is also hard to think why school authorities would take the risk of deviating from the way the program guidelines if it doesn't offer any personal gains.

Table 2: Whether received the right amount of money

Received the entitled amount	Frequency	Percentage	Cumulative
Received correct amount	784	93.33	93.33
Received less	56	6.67	100
Total	840	100	

Table 3: Variation in money received across district categories

Received the entitled amount	High HDI	Medium HDI	Low HDI
Received correct amount	96.67%	96.41%	86.93%
Received less	3.33%	3.59%	13.07%

When we look at the form in which the beneficiaries received the transfer under this program (Table 4), we find that around 10 percent beneficiaries reported receiving a coupon or a bicycle and the rest received the benefits in the form of cash. This suggests that there is a possibility that 10 per cent of the beneficiaries may not have received a bicycle worth their entitlement.

Table 4: Form in which Benefitted under the programme

Form in which Benefitted	Frequency	Percentage	Cumulative
Money	849	89.84	89.84
Coupon	54	5.71	95.56
Cycle	42	4.44	100
Total	945	100	

Table 5: Variation in forms of transfer across district categories

Form in which benefitted	High HDI	Medium HDI	Low HDI
Money	99.01%	90.27%	79.27%
Coupon	0.5%	0%	14.57%
Cycle	0.5%	9.73%	6.16%

The phenomenon of transferring benefits in the forms of coupon or cycle seems more prevalent in the underdeveloped districts as shown in Table 5 above.

3.1.3 Grievances: Another key indicator to gauge the performance of a welfare program is to see whether the beneficiaries have any grievances related to the program. Table 6 below shows that only 9 percent of the households had any kind of grievances related to the programwhich suggests that a large majority of the beneficiaries were in general satisfied with the programme. Interestingly, households belonging to districts with high HDI are more likely to have grievance against the scheme (Table 7).

Table 6: Whether had any grievance regarding the bicycle programme

Whether had any grievance	Frequency	Percentage	Cumulative
No	746	90.42	90.42
Yes	79	9.58	100
Total	825[5]	100	

[5]The number of observations is lower in this case because we have this data at household level instead of beneficiary level (some of the households had multiple beneficiaries so beneficiary level data has higher number of observations).

Table 7: Variation in grievance across district categories

Whether had any grievance against scheme	High HDI	Medium HDI	Low HDI
No	86.04%	93.25%	93.89%
Yes	13.96%	6.75%	6.11%

3.1.4 Was the bicycle purchased?

The data suggests that most of the households did buy a bicycle using the programme money, as Table 8 below shows that almost 98 percent of the beneficiaries purchased a bicycle using the money received from school. This data is likely to be biased as beneficiaries may not want to report that they 'misused' the programme money.

However, the size of this bias is not likely to be very big. In our questionnaire, we first asked the households to give us the details of their assets, including the number of bicycles and source of money for purchasing these bicycles. This asset data allow us to calculate the total number of bicycles (purchased using the money received from school) for every household.

The next block of the questionnaire have questions related to the bicycle scheme – amount of money received and whether they bought a bicycle – which also gives us the total number of bicycles in the household purchased using programme money.

Households are unlikely to report owning a bicycle while providing the asset details if they never purchased it. However, it is possible that when they face the bicycle programme specific questions, some of them misreport having purchased a bicycle even if in reality they had used it on something else. If this is the case, such households would report having purchased higher number of bicycles in the bicycle programme section of the questionnaire than what they report while providing asset details. In Table 9 we can see that for 95 percent of the households there is no discrepancy in the numbers of bicycles reported in these two sections. Only 1.3 percent households seem to have lied about purchasing the bicycle and rest of the households (3.3 percent) seem to have underreported the number of bicycles in the bicycle programme block of the questionnaire.

Table 8: Whether purchased a bicycle if received money under the programme

Whether purchased a Bicycle	Frequency	Percentage	Cumulative
New Cycle	818	97.27	97.27
Old Cycle	6	0.71	97.98
Did Not Purchase	17	2.02	100
Total	841	100	

Table 9: Difference in bicycle ownership across asset and bicycle scheme block

Difference in bicycle ownership	Frequency	Percentage	Cumulative
Overreported	11	1.31	1.31
No Difference	803	95.37	96.67
Underreported	28	3.33	100
Total	842	100	

Thus, some of the basic indicatorsof the performance of this programme-- including exclusion rate, corruption and leakage, grievance rate and money utilization rate-- suggest that the bicycle program is functioning well,and that most beneficiaries seem to be satisfied with it.

3.2 Cash versus Kind

Given a reasonably good performance in terms of implementation of the scheme, one would expect that the most of the beneficiaries would be happy with the Bihar Government's innovativeidea of giving cash instead of a bicycle. However, when the beneficiaries were asked whether they considered receiving cash as a better option than receiving a bicycle itself, only 45 percent of them preferred receiving cash over kind. Thus, it is important to explain why majority of the beneficiaries seem to prefer kind over cash despite the fact that the program seems to be performing reasonably well.

However, before we systematically explore possible reasons for this strong preference for kind over cash, we should discuss whether a beneficiary's stated preference actually reflects her 'real' preference. Beneficiaries' stated preference for cash versus kind is not only influenced by the functioning ofthe scheme underway, but also by their view of the alternative. If they have an ideal in-kind transfer programme in mind (where they would receive a good quality bicycle without paying anything) while stating their preference for cash or kind, they are more likely to prefer kind. Therefore, this would induce a bias in their preference in favour of in-kind transfers. On the other hand, if the households believe that the in-kind transfers invariably provide low quality goods, it would induce a bias against the in-kind transfers.

It is hard to predict which type of bias would dominate in this context. Perhaps, beneficiaries' experience with other in-kind transfer programs by the government (eg. kerosene, food grains, textbooks, midday meals) is likely to shape their viewof the hypothetical 'Bicycle Program' in-kind. Since most of these government run in-kind transfer programs tend to perform poorly, it would be naïve to believe that beneficiaries would think that the in-kind transfer would work well in the case of bicycles.

3.3 Determinants of Households' Preference between Cash and Kind

A wide range of factors can influence households' preference for cash versus kind: the program design, its implementation, households' socio-economic characteristics, and access to markets. It would be useful to classify most of these factors in two categories: the demand-side and the supply-side. The demand-side includes factors relating to various household and village characteristics: income level, access to credit, household size, occupation, distance from the district town and bicycle storesetc. The supply side, on the other hand, includes factors that determine the effectiveness and efficiency of the programme.

3.3.1 The Supply Side

The importance of supply side factors in shaping household's preference for cash versus kind cannot be overstated. If a particular transfer programme is flawed by design, or well-designed but poorly implemented, the beneficiaries would be more inclined to prefer the alternative mode of transfer. We have seen earlier that this programmehas done well in terms of covering most of the eligible beneficiaries, curtailing leakage and corruption. While these variables are important indicators of programme quality, there are several other supply-side factors that can affect beneficiaries' degree of satisfaction with the programme and therefore may play a role in influencing their preference for cash or kind. Some of the key supply side factors are discussed below.

a) Conditionality

The cash transferred under this program comes with a condition that the beneficiariessubmit a receipt provided by the bicycle store on purchasing a bicycle. According to the programme rules,

thebeneficiaries are supposed to submit the receipt only after receiving the money from the school. However, our survey data reveals that the implementation of this condition deviates from this. Table 10 below shows that almost every beneficiary submitted a receipt but interestingly, around 30 percent of the beneficiaries had to submit it even before they received the money from the school. When we look at the district-wise figures (Table 11), we find that there is enormous variation across districts, which suggeststhat demanding receipts before the transfer may be a district level phenomenon[6]. Despite the district level variation, it is clear that in some of the districts school authorities put pressure on beneficiaries to submit a receipt beforehand[7]. This means that the beneficiaries who submitted a receipt before receiving the moneyhad to either purchase a bicycle using their own funds or had to arrangefor a fake receipt. This must have been burdensome for many beneficiaries, especially the poor. Thus, the way conditionality is designed and enforced by the implementing authorities may play a role in shaping beneficiaries'perception of theprogramme.

Table 10: Whether submitted the receipt if received money under the programme

Whether submitted Receipt	Frequency	Percentage	Cumulative
After Receiving Money	565	68.48	68.48
Before Receiving Money	249	30.18	98.67
Did Not Submit	11	1.33	100
Total	825	100	

Table 11: Receipt submission across districts

Receipt	Araria	Banka	Lakhisarai	Muzaffarpur	Sheikhpura	West Champaran
After Receiving Money	79.76%	97.87%	100.00%	55.65%	97.50%	57.14%
Before Receiving Money	15.48%	0.00%	0.00%	44.08%	2.50%	40.11%
Did Not Submit	4.76%	2.13%	0.00%	0.28%	0.00%	2.75

[6]In this case the performance is not linked to the HDI score of the district.

[7]They do so to ensure that they have a receipt for every beneficiary as required by the Department.

b) Delays in Payment

Another supply-side factor that could have an impact on beneficiaries' preferences is the delay in disbursement of money by the school authorities. The beneficiaries of this programmeshould ideally receive the money within the first six months after they enrol themselves in the 9th gradebut the data suggests that there are often huge delays in disbursement of money. In Table 12 below we can see that around half of the beneficiaries reported that they received the money after they had entered Grade 10th, which means it was delayed by at least six months. Again there is considerable variation across districts as shown in Table 13; interestingly, the delay in disbursement of money is substantially higher in high HDI districts than the low HDI districts.

Table 12: Whether received money in the same year

Year in which received money	Freq.	Percent	Cum.
Grade 9	462	49.57	49.57
Grade 10	470	50.43	100
Total	932	100	

Table 13: Delay in receiving money across district categories

Year in which received money	High HDI	Medium HDI	Low HDI
Grade 9th	21.86%	46.49%	82.81%
Grade 10th	78.14%	53.51%	17.19%

c) Inadequate Money

It is also important to find out whether the money received under the scheme was sufficient to purchase a bicycle. The data reveals that almost every beneficiary (98 per cent) had to add money in order to purchase a bicycle. As Table 14 below shows, on an average the beneficiaries spent additional Rs 979 to purchase a bicycle. It is important to note here that the average additional spending—Rs 979—does not purely reflect inadequacy of money. This is partly a result of the fact that some of the beneficiaries may opt for expensive bicycles and prefer to top up the money they receive from the government. However, market price of the cheapest bicycle models of three most popular companies -- *Atals*, *Avon* and *Hero* (these three together covered

around 80 percent of the beneficiaries in our sample) -- ranges between Rs 3100-3300, and therefore beneficiaries need to add at least 600-700 even when they buy the cheapest bicycle available in the market. This inadequacy of the transfers could perhaps make some of the households less likely to support a cash transfer program.

Table 14: Additional money spent in purchasing the bicycle

Variable	Observations	Mean	Std. Dev.	Min	Max
Additional Spending	883	979.9151	391.5851	0	3500

3.3.2 Demand Side Factors

It is often argued that fixing supply side problems is sufficient to make a transfer program popular among the beneficiaries. However, even a well-functioning transfer program may not satisfy many beneficiaries since they might be constrained by a variety of household specific factors that doesn't allow them to fully benefit from the given transfer program. We discuss a few factors to illustrate this.

a) Income and Liquidity Constraints:

We have seen earlier that the money provided under this program is not sufficient to purchase a new bicycle and most beneficiarieshave to spend additional money in order to make the final purchase. While this wouldn't affect relatively richer households much, the beneficiaries who are poor or facing short term financial problems may not like this programme even if it performs well in terms of reducing the leakage. The data suggest that a significant section of the beneficiaries had to borrow money from different sources for the additional money required for purchasing a bicycle. Table 15 shows that while 72 percent of the beneficiaries used their own savings, 25 percent of them had to borrow money.

Table 15: Source of additional money required to purchase the bicycle

Source of additional money	Frequency	Percentage	Cumulative
Own Savings	650	72.06	72.06
Loan	225	24.94	97.01
Others	27	2.99	100
Total	902	100	

b) Self-Control problems and Intra-household conflict

Households with greater intra-household conflicts or with self-control problems may prefer receiving benefits in-kind as it works as a commitment device, assuming resale is not an easy option. It is hard to measure these factors and therefore one may not be able to clearly show whether they indeed play a role in shaping households' preferences. However, one can use a few proxy variables that may provide some suggestive evidence in this regard. First, it is possible that the female beneficiaries would be more likely to prefer kind over cash as cash could be misused by the male members who tend to have greater say in the household decision-making. Similarly, households headed by a female may be more likely to prefer kind if markets (in this case – the bicycle stores) are not easily accessible.

3.4 Regression Results

The discussion in the previous section shows that a wide range of demand and supply-side factors can shape beneficiaries preference for cash or kind. In order to assess the relative importance of these factors, we run Probit regressions which are reported below in Table 8. We should point out that no causal inference can be made from these given the nature of the data – they provide some suggestive correlations.

The table 16 reports the marginal effects of the Probit regressions where the dependent variable is whether the household think receiving cash is a better option than receiving a bicycle. We have three sets of explanatory variables. Column 1 has only household level explanatory variables; Column 2 has both household and village specific variables. Column 3 has only household specific variables but with village fixed effects.

3.4.1 The supply side factors

The results shown in Table 16 (Column 3) reveal that most supply side factors do not seem to have an impact except the way the condition related to receipt submission was enforced.As discussed earlier, this condition was not enforced in an ideal way. We have three categories of beneficiaries in terms of how they fulfilled this condition: first, those who submitted a receipt after receiving money; second, those who were forced to submit a receipt even before receiving the money; and third, those who did not submit a receipt. The results presented in Column 3 shows that the beneficiaries who had to submit a receipt even before receiving the money were 20 percentage points less likely to prefer cash compared to those who submitted the receipt after receiving the money.

The problem with this condition is not only that it has been badly implemented but it is also flawed by design: if the beneficiaries are asked to submit the receipt after receiving the money, it would be difficult for school authorities to enforce it. However, asking for a receipt before giving

them money would make it burdensome as households will have to either arrange a fake receipt or purchase a bicycle using own (or else, borrowed) money. This suggests that conditions related to use of the money are very hard to enforce and should be imposed only when the potential benefits outweigh the costs. In this case, the main aim of the programme is to increase student's enrolment in the government high schools, and therefore conditionality related to enrolment and attendance should be more strictly enforced than how the money is utilized by the beneficiaries.

None of the other supply side factors such as the delay in disbursement of money (measured by a binary variable-- whether they received the money in the grade 9th or 10th), whether they received less money, whether they had any kind of grievance related to the functioning of the programme, the amount of money the beneficiaries had to add in order to purchase the bicycle, and the year in which they benefitted under this program seem to have any impact on beneficiaries' preference for cash versus kind.

3.4.2 The Demand Side Factors

While most supply-side factors do not seem to have an effect, several demand-side factors have significant effects.

First, the results suggest that the beneficiaries belonging to the richer households are more likely to prefer cash over kind than those belonging to the poorer households. Column 3 of Table 16 shows that an increase in monthly household income by Rs 1,000 increases the probability of preferring cash by 6 percentage points. Similarly, households who live in semi-pucca houses were 15 percentage points more likely to prefer cash over kind, compared to those who lived in kucha houses. This might be because the money provided under this program is insufficient to purchase a new bicycle and most beneficiaries need to add money. While the rich can use their own savings, the poor have no option but to borrow. In fact, the results show that beneficiaries who had to borrow the additional money required to purchase a bicycle were 16 percentage points less likely to prefer cash over kind than households who used their own savings to meet this requirement.

The household size variable is also positive and significant. It is unclear why larger households would be more likely to prefer cash over kind. One possible explanation could be that a large household is likely to have several potential users of the bicycle and therefore such households may want to purchase a kind of bicycle that can be used by several members in the household. Since a cash transfer allows a household to purchase a bicycle of their choice, larger households are more likely to prefer cash over kind. Alternatively, large households may prefer cash to kind since cash can be siphoned off to other uses, and in a larger household, there may be a larger group of individuals who would not directly benefit from a bicycle.

A few other demand-side factors have significant effects. For example, age of the household head has a negative coefficient but the average age of working members seem to have a positive impact. Also, the share of working female members in total number of working members in the

household has a negative coefficient. It is hard to develop a convincing explanation of why exactly these variables influence households' preference the way they do, but perhaps it suggests that the intra-household conflict along the lines of age or sex might play an important role in shaping household preferences regarding cash versus kind.

The number of beneficiaries in the household doesn't seem to have any impact on their preference for cash over kind. This might be because most of the beneficiaries end up purchasing a bicycle and so their inability to use the money received under this programme for other purposes make them indifferent between cash or kind.

3.4.3 Accessibility to Market

The results presented in column 2 of Table 16 has village level variables and as expected, beneficiaries who belong to villages that are very far from a bicycle store were less likely to prefer cash over kind. An increase in this distance by 1 km reduces the likelihood of preferring cash by 1.3 percentage points. Distance from the district town, however, doesn't seem to have any impact on households' preferences.

3.5 Demand-Side versus Supply-Side

The evidence presented in this paper seems to suggest that the demand-side factors play a dominant role in determining households' preference for cash or kind in case of the bicycle programme. However, it is important to note that there are a few caveats in this interpretation.

First, the supply-side and demand-side factors may interact and therefore impact of a particular demand-side factor should not be seen in isolation from the supply side issues. For instance, our results suggest that some of the demand-side factors -- household income and whether they had to borrow the additional money required to purchase a bicycle—had a significant andnegative impact on their likelihood of preferring cash over kind. While these variables definitely belong to the demand-side, the main reason why they play such an important role lies in a supply-side constraint: the money provided under this programme is inadequate to purchase a bicycle. Thus, it is possible that some of the demand-side factors would behave differently depending on the level of certain supply-side variables.

Second, one possible reason why most supply-side factors do not seem to matter is that the regression model with village fixed effects may not be appropriate to study the role of supply-side factors in explaining the heterogeneity in households preference for cash or kind. This is because village fixed-effects make a variable redundant if it doesn't show much variation within a village, and since most of the beneficiaries in a village go to the same school it is unlikely that the supply-side factors would vary considerably within a village. There is some evidence to support this. In column 1 of Table 16, which report the results of probit regression that has only household level regressors, we find that several supply-side factors indeed become significant. However, their significance disappears on including some village level variables (Column 2)that

are unlikely to be correlated with the supply-side variables (one high school caters to students from 10-15 villages).

Table 16: Determinants of Households' Preference for Cash over Kind for Bicycle

Variables	(1)	(2)	(3)
	Dependent Variable: Whether cash is a better option than giving a bicycle		
Supply-Side			
Amount of money received (Rs Thousand)	0.000615	0.0110	0.0717
	(0.01)	(0.11)	(0.68)
Whether received less than the entitlement (d)	0.0321	-0.0348	-0.0370
	(0.38)	(-0.39)	(-0.38)
Whether had a grievance regarding scheme (d)	-0.0520	0.0248	0.0731
	(-0.77)	(0.33)	(0.82)
Amount of money beneficiaries had to add (Rs Thousand)	-0.195***	-0.0436	0.000929
	(-3.03)	(-0.63)	(0.01)
Whether received money within one year (d)	0.137***	0.0215	-0.0270
	(3.13)	(0.42)	(-0.46)
Receipt Submitted Before Receiving Money (d)	-0.217***	-0.170***	-0.203***
	(-4.94)	(-3.27)	(-3.33)
Did Not Submit a Receipt (d)	0.128	0.107	0.184
	(0.75)	(0.61)	(0.93)
Demand-Side			
Per capita household income (Rs Thousand)	0.0000683***	0.0000542***	0.0000617***
	(4.12)	(3.15)	(3.17)
Whether lived in a pucca house (d)	-0.0409	0.00450	0.0142
	(-0.78)	(0.08)	(0.22)
Whether lived in a semi-pucca house (d)	0.116**	0.149***	0.155**
	(2.27)	(2.62)	(2.49)
Land	-0.00000993	-0.000295	-0.000741
	(-0.02)	(-0.43)	(-1.01)
Whether borrowed the additional money (d)	-0.185***	-0.179***	-0.152**
	(-3.83)	(-3.37)	(-2.31)
Number of Beneficiaries in HH	0.0324	0.0597	0.0728
	(0.82)	(1.37)	(1.53)
Household Size	0.0540***	0.0578***	0.0558***
	(3.73)	(3.70)	(3.18)
Ratio of Dependent Members in HH	-0.519**	-0.595**	-0.498*
	(-2.14)	(-2.33)	(-1.84)
Share of Working Female Members in Total Working Members of HH	-0.277*	-0.352**	-0.458**
	(-1.80)	(-2.18)	(-2.56)
Household Head is Male (d)	-0.238**	-0.214**	-0.193
	(-2.44)	(-2.01)	(-1.53)

HH Head's Years of Education	0.00388 (0.81)	0.000796 (0.16)	0.000104 (0.02)
Age of Household Head	-0.00582* (-1.72)	-0.00769** (-2.10)	-0.00654* (-1.65)
Average Age of Working Members	0.00781** (2.10)	0.00921** (2.30)	0.00884** (2.04)
Maximum years of education in HH	-0.0105 (-1.05)	-0.0181* (-1.69)	-0.0154 (-1.31)
Household Head Engaged in Cultivation (d)	0.205*** (3.48)	0.128** (2.00)	0.0823 (1.16)
Household Head Engaged in Labor (d)	0.149** (2.42)	0.0538 (0.81)	0.0400 (0.54)
Muslim (d)	0.0158 (0.22)	-0.0278 (-0.36)	-0.201** (-2.31)
SC (d)	0.0764 (1.03)	0.138* (1.67)	0.205** (2.22)
OBC (d)	0.0497 (0.94)	0.0953 (1.45)	0.0609 (0.83)
Beneficiary is Female (d)	-0.0617 (-1.40)	-0.0105 (-0.22)	0.0157 (0.30)
Village Level			
Distance from the District Town		0.00170 (1.06)	
Distance from a Bicycle Store		-0.0127*** (-3.41)	
Share of SC population in Village		0.0205 (0.07)	
Share of other caste population in Village		0.417*** (2.59)	
Share of HHs with agriculture as main occupation		1.671*** (4.14)	
Share of HHs with wage labour as main occupation		1.132*** (2.88)	
Share of Landless HHs		0.659*** (3.41)	
Share of HHs with pucca houses		-0.341 (-1.52)	
Share of HHs with semi-pucca houses		0.384* (1.81)	
village fixed effect	No	No	Yes
Observations	705	705	682
Pseudo R^2	0.159	0.248	0.318

Marginal effects; *t* statistics in parentheses
(d) for discrete change of dummy variable from 0 to 1
* $p< 0.1$, ** $p< 0.05$, *** $p< 0.01$

4. Discussion

This paper has so far been primarily concerned with explaining why the majority of beneficiaries prefer kind over Cash despite the fact that this program has performed well in terms of transferring the benefits to the beneficiaries without much leakage. This section attempts to provide theoretical explanations for some of the puzzles that have emerged from the survey data that cannot be explored empirically due to lack of sufficient variation in the data.

4.1 Why is the 'Bicycle Programme' marked with lower leakage?

The cash-transfer approach has some inherent advantages over the in-kind transfers (IKTs) in reducing the leakage. First, unlike the IKTs, it removes the need for public procurement, transportation and delivery of goods, and therefore the public authorities have lesser scope to divert the resources meant for the beneficiaries. Second, it is relatively easy to monitor a cash transfer program -- both by the top-down and bottom-up institutions -- as entitlements are easy to measure, unlike the IKTs where it is very difficult to assess the quality of goods and services. However, despite these, most of the cash transfer programs such as Indira Awas Yojna, MNREGA, and various pension programs, continue to be plagued by high level of corruption. Why it is then that the 'Bicycle Program' managed to perform relatively better?

First, this is a universal programme where every student who is enrolled in standard $9^{th}$is entitled to receive the same amount of money. This ensures that the school authorities have no discretionary power in identifying beneficiaries and therefore little scope of extracting money from them.

Second, this programme manages to solve the collective action problem by design. More often than not, the beneficiaries of a transfer programme, do not share a strong bonding among themselves as their other identities—caste, religion, occupation, village—tend to dominate. This makes the job of mobilizing beneficiaries to raise voice against the corruption in the welfare programmes very costly and the beneficiaries left on their own, would not be able to solve the collective action problem. However, the beneficiaries of this programme are part of an institution (the school) and identify themselves as group which means that they can easily come together to put pressure on school authorities if they attempt to deny them their entitlements. Thus, the universality of program and a strong group identity among the beneficiaries lowers the cost of mobilization and this coupled with tangible potential benefits of collective action (they would receive the right amount of money), ensures that it is in the interest of beneficiaries to come together and raise their voice to make the system accountable. In fact, there is ample anecdotal evidence for this. The school students of various parts of Bihar have been reported organizing protests against the school authorities for irregularities in the disbursement of money under the bicycle programme.

This shows that a transfer programme that is designed in a way that encourages collective action has the potential of preventing certain forms of corruption.

4.2 Trade-off between universality and corruption

The results presented in the paper show that demand side factors play an important role in determining households' preference for cash versus kind. This suggests that even a well-functioning cash transfer program would affect beneficiaries differently. An ideal cash transfer program should take into account the varied needs of households. For instance, one could argue that the poor households should receive more money under this program so that they don't have to borrow the additional money required to purchase a new bicycle from market. Similarly, households who live in remote villages should be compensated for the relatively high transportation cost they incur to purchase a bicycle.

While tailoring a transfer program according to the varying needs of the beneficiaries is likely to make it more popular, it may also create more opportunities for corruption. First, by introducing new exceptions in the program the implementing officials gain some discretionary power that could be misused. Second, the variation in benefits for different types of households may confuse many beneficiaries about their actual entitlements, which can be exploited by officials implementing the programme. Third, this would also create divisions among the beneficiaries (eg. APL, BPL, and Antyodya group under PDS) which makes it even harder for beneficiaries to come together to hold the implementing authorities accountable.

Thus, we see there could be a trade-off between making a transfer program responsive to the needs of the beneficiaries and the level of leakage and corruption.

4.3 Nature of Goods and Conditionality

The cash transfer programs often come with conditions attached. There are two types of conditions. First, the behavioural conditions that require beneficiaries to avail certain services such as regular attendance in schools or getting their children immunized. Second, the utilization conditions that require the beneficiaries to use the money for a specific purpose. There is a tendency among policymakers to impose multipleconditions without carefully assessing the costs and benefits of each condition. For instance, in case of the bicycle programme, the beneficiaries not only need to enroll themselves in grade 9 in a government run school but also submit a receipt as evidence of having purchased a bicycle.

While it is important to strictly enforce the condition related to enrolment (as the idea behind this program is to work as an incentive to increase secondary school enrolment rate) the reasons for imposing the second condition—purchase a bicycle and submit the receipt—doesn't seem very compelling. First, ensuring that every beneficiary submits a receipt takes considerable amount of teachers' time. Second, many beneficiaries are forced to arrange for a receipt even before receiving the money from the school,which is burdensome for the beneficiaries as evident by their greater likelihood for preferring kind over cash.

Third, the economic logic behind attaching this condition seems to be flawed. Conditions related to utilization are attached when one believes that the conditioned-on good may be consumed less than its optimal level due to factors such as intra-household conflictsand/or self-control problems. For instance, an unconditional cash transfer program that aims to improve the nutritional status of children or pregnant women may not be very effective due to presence of intra-household conflicts. However, a bicycle is a visible good, for which peer pressure effects may be very strong and even in absence of conditionality beneficiaries are likely to purchase a bicycle if other children in the village use a bicycle to go to the school.

5. Conclusions

The results fromour survey show that the bicycle programme has performed well in terms of coverage rate and curtailing direct forms of corruption. However, a large majority of the beneficiaries stated their preference in favour of receiving the benefits In-Kind instead of Cash. Our analysis of determinants of beneficiaries' preference for cash versus kind suggest that the demand-side factors and village characteristics (accessibility of markets) play a dominant role in shaping beneficiaries' preference, though a few supply-side factors related to how conditionalities are imposed also seem to matter. While the limited scope of our survey doesn't allow us to rigorously investigate several questions, the findings reported in the paper may be useful in identifying interesting questions for further research.

References

Ghosh, Jayati (2011), "Cash Transfers as the Silver Bullet for Poverty Reduction: A Sceptical Note,"*Economic & Political Weekly*, 21, May 21.

Kapur, Devesh, Partha Mukhopadhyay and Arvind Subramanian (2008): "The Case for Direct Cash Transfers to the Poor",*Economic & Political Weekly*, 43 (15): 37-43, 12 April.

Khera, Reetika (2011), "Revival of the Public Distribution System: Evidence and Explanations", Economic & Political Weekly, 44 & 45, 5 November.

Shah, Mihir (2008), "Direct Cash Transfers: No Magic Bullet",*Economic & Political Weekly*, 23 August.

Appendix

Table A1: Sample Characteristics

Variables	Mean	Standard Deviation	Min	Max	Sample size
Household Head is literate	63%				827
Household head's years of education	5.7	5.14883	0	17	827
Caste					823
SC	15.55%				
ST	0.36%				
OBC	60.39%				
Others	23.69%				
Occupation of household head					
Agriculture	35.08%				
Casual Labour	39.71%				
Regular Employment	13.16%				
Others	12.05%				
House Type					821
Pucca	33.13%				
Semi-Pucca	31.55%				
Kucha	35.32%				
Per capita household income	1568	1967	-2607	30812	838
Official income category					827
APL	45.83				
BPL	48.37				
Did not know	5.80				
Number of beneficiaries of the bicycle scheme in household					840
One	87.86%				840
Two	10.48%				102
Three	1.43%				14
Four	0.24%				2

The International Growth Centre (IGC) aims to promote sustainable growth in developing countries by providing demand-led policy advice based on frontier research.

Find out more about
our work on our website
www.theigc.org

For media or communications
enquiries, please contact
mail@theigc.org

Subscribe to our newsletter
and topic updates
www.theigc.org/newsletter

Follow us on Twitter
@the_igc

Contact us
International Growth Centre,
London School of Economic
and Political Science,
Houghton Street,
London WC2A 2AE

IGC
International
Growth Centre

DIRECTED BY
LSE
UNIVERSITY OF OXFORD

FUNDED BY
UKaid
from the British people

Designed by soapbox.co.uk