Cash versus Kind

Understanding the Preferences of the Bicycle Programme Beneficiaries in Bihar

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This paper presents results from a survey on the Mukhyamantri Cycle Yojana in Bihar that provides money to purchase a bicycle to every student who is enrolled in Standard 9 of a government-run/aided school. The paper finds that the bicycle programme has performed well in terms of coverage rate and curtailing direct forms of corruption but a large majority of the beneficiaries stated their preference in favour of receiving the benefits in kind instead of cash. It analyses the determinants of beneficiaries' preference for cash versus kind and finds that the demand-side factors and village characteristics (accessibility of markets) play a dominant role in shaping beneficiaries' preferences.

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An important plank of anti-poverty policies is direct transfers to the poor, in cash or in kind. Cash transfers can be unconditional, or conditional on children attending school and family members receiving preventative healthcare (for example, programmes such as Progresa, renamed Prospera, in Mexico, and Bolsa Familia in Brazil) or in-kind transfers (for example, food, sanitation, education, health services provided free or at a subsidised rate to the poor).

In the last few decades, there has been a growing interest in the use of cash transfer programmes as a policy tool to achieve a wide range of developmental goals, in contrast to direct provision by the government. The Government of India (GoI) has started 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 is implementing the DBT only for LPG, 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—supplies under the public distribution system (PDS)—will be eventually replaced with a cash transfer programme.

The government's plan to replace some of the in-kind transfer (IKT) programmes, especially the PDS, with a cash transfer programme has been fiercely debated. The proponents of the cash transfer approach (for example, Kotwal et al 2011; 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 biases in the distribution. The *Economic Survey of India* of 2014–15 too made a forceful case for cash transfers, pointing out to the leakages and the regressive nature of the distribution of benefits of some of the IKTs. The supporters of IKTs, on the other hand, point out a large number of disadvantages inherent in a cash transfer programme: misuse of money, price fluctuations in the underdeveloped rural markets, the greater vulnerability of women and elderly, absence of banking facilities. They argue that reforming the existing programme is a more sensible approach than replacing it completely with a cash transfer programme (Khera 2011, 2014; Shah 2008).

While there is a fair bit of research on the impact of these transfer programmes and their relative performance on the outcome variables of interest (for example, health and education), there is little evidence of the logistics of the implementation of these programmes, and also, on the views of the beneficiaries in terms of the relative merits of alternative forms of transfers.[1] This paper studies the performance of a particular conditional cash transfer scheme in Bihar—the Mukhyamantri Cycle Yojana (Chief Minister's Bicycle Programme). This scheme provides money to purchase a bicycle to every student who is enrolled in Standard 9 of a government-run/aided school.[2] Muralidharan and Prakash (2013) have studied the impact of this scheme on secondary school enrolment and find that the exposure to the bicycle scheme increased girls' enrolment in secondary schools by 32%. While their study does provide evidence that this scheme has been successful in terms of having a positive impact on girls' enrolment, it does not provide any information on the way it was implemented and how the beneficiaries perceived different aspects of the programme. With this in mind, we conducted a household survey among the beneficiaries of this programme to answer the following questions: (a) how was the performance of the programme in terms of transferring the benefits to the eligible beneficiaries; (b) whether the money received under this programme was utilised by the beneficiaries to purchase a bicycle; (c) whether the beneficiaries prefer receiving a bicycle instead of cash; and (d) what are the determinants of beneficiaries' preference for cash versus kind.

Our key findings are as follows: some of the basic indicators of the performance of this programme (for example, corruption and leakage, grievances, and money utilisation) suggest that the programme is functioning well, and that most beneficiaries seem to be satisfied with it. 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 idea of getting 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% of them preferred receiving cash over kind. Our analysis of the determinants of beneficiaries' preference for cash versus kind suggests that the demand-side factors and village characteristics (accessibility of markets) play a dominant role in shaping beneficiaries' preferences.[3]

The results presented in the paper are based on a primary survey that was conducted in late 2012. However, despite the considerable time that has elapsed since the survey, we believe that our findings are still relevant to the discussion on the design of transfer programmes. First, the design of the bicycle programme has not seen any major change over the last four years. In particular: (a) the amount of transfer has remained the same at Rs 2,500; (b) the money is still disbursed in the form of cash at camps organised at the school level; and (c) a "receipt" is still demanded by school authorities as evidence for purchase of the bicycle. Thus, given the lack of any major change in the design, the functioning of the bicycle programme and beneficiaries' perceptions are unlikely to be very different now from what we found four years ago. Second, the debate over various modes of transfer has made little progress over the past few years due to a lack of new empirical studies on the functioning of cash transfer programmes. We hope that this study makes a useful contribution to this debate as it provides some empirical information on the functioning of a cash transfer programme on the ground and possible reasons for heterogeneity in the preference of beneficiaries over various modes of transfer.

Section 1 provides details of the survey design and provides a brief introduction to the bicycle programme. Section 2 presents the main findings related to performance of the programme and determinants of beneficiaries' preference for cash versus kind. Section 3 discusses the theoretical implications of the key results. Section 4 concludes the paper.

1 Survey Design and Details of the Bicycle Programme

1.1 Survey Design

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 human development index (HDI) scores were used to divide all districts of Bihar into three groups: (1) high HDI districts; (2) medium HDI districts; and (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).

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 Mukhyamantri Cycle Yojana 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.[4] 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 bicycle programme.

Table A1 in the Appendix (p 60) provides the key socio-economic characteristics of the sample households.

1.2 The Bicycle Programme: A Brief Introduction

This programme was launched in 2006 for all the girls enrolled in Standard 9 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 was increased to Rs 2,500 from the academic year 2011–12. From the academic year 2012–13, the government has also imposed an additional conditionality: only children with at least 75% attendance would receive money for the bicycle.

All the schools, all over the state, are asked to prepare a list of Standard 9 students based on the school enrolment register till the 31 May 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 the treasury, announce a day for distribution of the 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.

2 Results

2.1 Basic Results

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

2.1.1 Exclusion of Eligible Beneficiaries

An important indicator of the performance of any transfer programme is whether the benefits reach the intended beneficiaries. During the village census, we identified households which were likely to benefit from the bicycle programme (households with a child that attended a government high school between 2007 and 2012) and asked them whether they benefited from this scheme, and, if not, what was the reason. The data reveals that only 3% of the total beneficiaries reported not having benefited despite meeting the eligibility criteria, as shown in Table 1. Thus, this suggests that this programme has done remarkably well in terms of covering the beneficiaries who meet the eligibility criteria.

Table 1: Performance of Bicycle Programme

Indicators	Percentage
Beneficiary excluded despite meeting the eligibility criteria	3.22
Received correct amount	93.33
Received less	6.67
Received money	89.84
Received coupon	5.71
Received cycle	4.44
Had any grievance related to the programme	9.58
Purchased new cycle	97.27
Purchased old cycle	0.71
Did not purchase a cycle	2.02
Over-reported purchasing a cycle	1.31
Reported correct number of cycle	95.37
Under-reported number of cycle	3.33

2.1.2 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 programme 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 do not 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.[5]

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

The data on the amount of money received under this programme reveals that 93.3% of the beneficiaries received the correct amount of money (Table 1). For the households that received less, the average difference from the entitled amount was Rs 441. The leakage seems to be mostly concentrated in financial year 2011–12 when the entitled amount was increased from Rs 2,000 to Rs 2,500.[6]

2.1.3 Mode of Transfer

When we look at the form in which the beneficiaries received the transfer under this programme (Table 1), we find that around 10% of the beneficiaries reported receiving a coupon or a bicycle and the rest received benefits in the form of cash. This suggests that there is a possibility that 10% of the beneficiaries may not have received a bicycle worth their entitlement.

2.1.4 Grievances

Another key indicator to gauge the performance of a welfare programme is to see whether the beneficiaries have any grievances related to the programme. Table 1 shows that only 9% of the households had any kind of grievances related to the programme which suggests that a large majority of the beneficiaries were in general satisfied with the programme.

2.1.5 Was the Bicycle Actually Purchased?

The data suggests that most of the households did buy a bicycle using the programme money. Table 1 shows that almost 98% of the beneficiaries reported purchasing 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 large. 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 has questions related to the bicycle scheme—the 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 a higher number of bicycles in the bicycle programme section of the questionnaire than what they report while providing asset details. In Table 1 we can see that for 95% of the households there is no discrepancy in the numbers of bicycles reported in these two sections. Only 1.3% households seem to have over-reported purchasing bicycles and rest of the households (3.3%) seem to have under-reported the number of bicycles in the bicycle programme block of the questionnaire.

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

2.2 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 innovative idea 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% of them preferred receiving cash over kind (Table 2). Thus, it is important to explain why a majority of the beneficiaries seem to prefer kind over cash despite the fact that the programme 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 of the scheme, 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 programmes by the government (for example, kerosene, foodgrains, textbooks, mid-day meals) is likely to shape their view of the hypothetical "In-kind Bicycle Programme." Since most of these government-run in-kind transfer programmes 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.

2.3 Determinants of Preference between Cash and Kind

A wide range of factors can influence households' preference for cash versus kind: the programme 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: level of income, access to credit, household size, occupation, distance from the district town and bicycle stores, etc. The supply side, on the other hand, includes factors that determine the effectiveness and efficiency of the programme.

2.3.1 Supply Side

The importance of supply-side factors in shaping a household's preference for cash or 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 programme has 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 here.

Table 2: Cash as an Option v Receiving a Bicycle Itself

Is Cash a Better Option Than Cycle?	Frequency	Percentage	Cumulative
No	512	54.94	54.94
Yes	420	45.06	100
Total	932	100	

Table 3: Time of Submission of Receipt

Submission of 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	

(a) Conditionality: The cash transferred under this programme comes with a condition that the beneficiaries submit a receipt provided by the bicycle store on purchasing a bicycle. According to the programme rules, the beneficiaries 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 procedure. Table 3 shows that almost every beneficiary submitted a receipt but interestingly, around 30% of the beneficiaries had to submit it even before they received the money from the school. This means that the beneficiaries who submitted a receipt before receiving the money had to either purchase a bicycle using their own funds or had to arrange for 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 the programme.

(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 programme should ideally receive the money within the first six months after they enrol themselves in the Standard 9 but the data suggests that there are often huge delays in disbursement of money. Around half of the beneficiaries

reported that they received the money after they had entered Standard 10, which means it was delayed by at least six months.

(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%) had to add money in order to purchase a bicycle. On an average, the beneficiaries spent an additional Rs 979 to purchase a bicycle. This inadequacy of the transfers could be a major reason as to why such a large number of households stated preference for receiving a bicycle instead of cash. While this seems like a rather straightforward argument for in-kind transfers, if the beneficiaries valued being able to choose the right model of the bicycle, they could still prefer cash even if that required a top-up. Therefore, our study suggests that "free to choose" ideas that lie behind cash transfers or vouchers may be more relevant once the income of the beneficiaries cross a certain critical threshold.

2.3.2 Demand-side Factors

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

(a) Income and Liquidity Constraints: We have seen earlier that the money provided under this programme is not sufficient to purchase a new bicycle and most beneficiaries have to spend an additional amount in order to make the final purchase. While this would not 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. Our data shows that while 72% of the beneficiaries used their own savings, 25% of them had to borrow money.

(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.

2.4 Regression Results: Households' Preference for Cash or Kind

The discussion so far 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 in Table 4. We should point out that though no causal inference

Table 4: Determinants of Households' Preference for Cash over Kind for Bicycle

Variables	(1) HH Var	(2) Village FE	(3) HH & Vill Var
Dependent Variable: Whether cash is a better option than giving a bicycle			
Supply-side			
Amount of top-up money add (Rs thousand)	-0.000201***	-0.00000284	-0.0000489
	(-3.07)	(-0.04)	(-0.70)
Receipt submitted before receiving money (d)	-0.224***	-0.183***	-0.198***
	(-4.95)	(-2.85)	(-3.89)
Did not submit a receipt (d)	0.0232	0.134	-0.00273
	(0.12)	(0.59)	(-0.01)
Demand-side			
Per capita household income (Rs thousand)	0.0662***	0.0647***	0.0499***
	(3.94)	(3.24)	(2.91)
Whether lived in a pucca house (d)	-0.0196	0.0315	0.0242
	(-0.36)	(0.47)	(0.41)
Whether lived in a semi-pucca house (d)	0.137***	0.173***	0.190***
	(2.60)	(2.68)	(3.45)
Whether borrowed the additional money (d)	-0.210***	-0.169**	-0.206***
	(-4.24)	(-2.49)	(-3.77)
Household size	0.0552***	0.0622***	0.0614***
	(3.71)	(3.41)	(3.82)
SC (d)	0.0769	0.248**	0.170**
	(1.00)	(2.56)	(2.00)
Village level			
Distance from the district town			0.00118
			(0.76)
Distance from a bicycle store			-0.0126***
			(-3.32)
Share of SC population in village			-0.0978
			(-0.35)
Village fixed effect	No	Yes	No
Socio-economic and demographic controls	Yes	Yes	Yes
Village-level controls	No	No	Yes
Supply-side controls	Yes	Yes	Yes
N	673	639	673
pseudo R^2	0.166	0.319	0.254

Socio-economic controls include land, male, years of education, maximum years of education, HH engaged in cultivation, HH engaged in labour, Muslim, beneficiary is female, ratio of dependent members, share of working female members, age of HH, OBC, number of beneficiaries; supply side additional controls include amount of money received, whether received less than the entitlement, whether had a grievance regarding scheme, whether received money within one year; village level controls include share of other caste population in village, share of HHs with agriculture as main occupation, share of HHs with wage labour as main occupation, share of landless HHs

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

can be made from these given the nature of the data, they provide some suggestive correlations.

Table 4 reports the marginal effects of the Probit regressions where the dependent variable is whether the household thinks receiving cash is a better option than receiving a bicycle. The sample is restricted to only those beneficiaries who benefited under this scheme in the form of cash. Column 1 has only household-level explanatory variables; Column 2 has household-specific variables with village fixed-effects; Column 3 has both household- and village-specific variables.

2.4.1 Supply-side Factors

The results shown in Table 4 (Column 2) reveal that most supply-side factors do not seem to have an impact except the way the condition related to receipt submission was enforced.[7] 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 2 show 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 students' enrolment in the government high schools, and therefore the conditionality related to enrolment and attendance should be more strictly enforced rather than how the money is utilised 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 Standard 9 or 10), 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 benefited under this programme seem to have any impact on beneficiaries' preference for cash versus kind.

2.4.2 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 2 of Table 4 shows that an increase in monthly household income by Rs 1,000 increases the probability of preferring cash by 6 percentage points. Similarly, households which live in semi-*pucca* houses are 17 percentage points more likely to prefer cash over kind, compared to those which lived in *kuccha* houses. This might be because the money provided under this programme 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 which 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 type 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 over 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, the age of the household head has a negative coefficient but the average age of working members seems to have a positive impact. Also, the share of working female members in the total number of working members in the household has a negative coefficient.[8] 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 does not 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.

2.4.3 Accessibility to Market

The results presented in Column 3 of Table 4 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 1.2 percentage points. Distance from the district town, however, does not seem to have any impact on households' preferences.

2.4.4 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 the impact of a particular demand-side factor should not be seen in isolation from 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 and negative 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 does not 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 4, which reports 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 3) that are unlikely to be correlated with the supply-side variables (one high school generally caters to students from 10–15 villages).

2.5 Regression Results: Determinants of Amount of Additional Spending on Bicycle

As discussed earlier, nearly every beneficiary spent additional money on purchasing a bicycle. The data shows that there is substantial variation across beneficiaries in the amount of top-up money. It varies from merely Rs 100 to as high as Rs 3,500.

In order to understand why the top-up money varies so much across beneficiaries, we run a basic linear regression where the dependent variable is "amount of additional money spent on purchasing a bicycle." Column 1 of Table 5 presents the result of this regression with village fixed effects.

One would think that the income and wealth-related indicators would play an important role in explaining the variation in the amount of top-up money on bicycle, as the income level of the households determine the type of bicycle they would be able to afford. However, contrary to our expectation, the results show that the income level of household and proxies of wealth are insignificant. As shown earlier, a significant number of beneficiaries had to borrow this additional money required to purchase the bicycle. One would expect that those who had to borrow would perhaps buy cheaper bicycles and therefore the amount of top-up money would be less compared to those who used their savings. However, the results show that even this variable is insignificant.

As expected, the amount of money received under the scheme has a significant and negative effect on top-up money.

The Muslims and Scheduled Cast households seem to purchase relatively expensive bicycles, compared to upper-caste Hindus. The Muslims and SC beneficiaries spend Rs 128 and Rs 138 more on a bicycle compared to Hindus and upper castes, controlling for household income, wealth, quality of programme implementation and various household demographic indicators. These differences are robust across different specifications as is evident from Column 2 (with additional controls) and Column 3 (only for years when the scheme became universal). These results are consistent with the argument that concern for social status is an important motive for consumption (Veblen 1899; Duesenberry 1949; Hirsh's 1976; Hopkins and Kornienko 2004). The beneficiaries belonging to households that have lower social status in the society due to their ethnic and religious identity (in this case, Muslims and SC) would attempt to improve their status by spending relatively more on "visible" goods such as a bicycle. This is consistent with the findings of Charles et al (2009) who show that in United States, Blacks and Hispanics devote a larger share of their expenditure on visible goods than the Whites.

Another interesting feature of this programme is that initially it was only for girls and in financial year 2009–10 it was

Table 5: Determinants of Households' Additional Spending on Bicycle

Variables	Dependent Variable: Amount of Additional Spending on Bicycle		
	(1)	(2)	(3)
Amount of money received from school	-0.446***	-0.451***	-0.494***
	(-7.24)	(-7.18)	(-7.94)
Received in same year	-22.62	-19.20	13.08
	(-0.73)	(-0.61)	(0.41)
Distance from school	9.777	9.833	7.111
	(1.60)	(1.60)	(1.16)
Per capita household income (Rs thousand)	-0.00627	-0.00463	0.000678
	(-0.94)	(-0.68)	(0.10)
Whether lived in a pucca house (d)	-54.58	-43.00	-56.91
	(-1.65)	(-1.27)	(-1.64)
Whether lived in a semi-pucca house (d)	-53.03	-47.56	-57.95*
	(-1.63)	(-1.45)	(-1.74)
Whether borrowed the additional money (d)	53.12	52.56	41.63
	(1.49)	(1.45)	(1.12)
Muslim (d)	128.6**	135.2**	157.5***
	(2.45)	(2.53)	(2.95)
SC (d)	138.3***	133.7***	114.0**
	(2.98)	(2.77)	(2.31)
OBC (d)	15.91	18.28	8.461
	(0.41)	(0.47)	(0.21)
Universal (d)	64.98	80.96	
	(0.86)	(1.06)	
Beneficiary is female			-130.9***
			(-5.00)
Constant	1735.1***	1651.1***	2288.8***
	(6.65)	(6.23)	(9.15)
Additional controls	No	Yes	Yes
Socio-economic demographic controls	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
Village fixed effect	Yes	Yes	Yes
N	740	728	687
R^2	0.382	0.391	0.410

Additional controls include receipt submitted before receiving money (d), did not submit a receipt (d), number of beneficiaries in HH, household head engaged in cultivation (d), household head engaged in labour (d).
Socio-economic controls include land, household head is male (d), household size, maximum years of education in HH; year dummies include received the money in 2007, 2008, 2009, 2010, 2011. Marginal effects; t statistics in parentheses; (d) for discrete change of dummy variable from 0 to 1;* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

made universal by including the boys as well. While there does not seem to be any systematic difference in the amount of top-up money between universal and pre-universal years, it would be interesting to test whether households discriminate against girls when it comes to providing the additional money to purchase the bicycle. As the boys were not eligible to benefit under the scheme before 2009–10, a meaningful test for difference in top-up money between boys and girls should restrict the sample to only those years in which both boys and girls were eligible under this scheme. This would ensure that the context (access to market, village and school characteristics) is same for both groups and any difference in the top-money can be attributed to households' decision to spend less on girls.

Column 3 shows the results of this regression and we find that the top-up money is significantly lower in case of girls than boys. The households are willing to provide Rs 130 less for girls than the boys, controlling for a wide range of household-level socio-economic variables, programme quality variables, and with year and village fixed-effects. While this difference suggests that households probably discriminate against girls as they are willing to chip in a lower amount of money for girls than the boys, we cannot reject a couple of competing explanations for this difference. It is possible that this difference might have been caused by supply-side factors. For instance, the retail market structure in rural Bihar is such that relatively expensive bicycle models are not available for girls as bicycles have traditionally been bought by men in Bihar.

3 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 programme 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.

3.1 Why Lower Leakage?

The cash transfer approach has some inherent advantages over the 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 programme—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. In addition to these, there are a few other features that are unique to the bicycle programme and may explain why it has performed so well in terms of having a lower level of leakages.

First, this is a universal programme where every student who is enrolled in Standard 9 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 bond among themselves as their other identities—caste, religion, occupation and village—tend to dominate. This makes the job of mobilising beneficiaries to raise their voices 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 the programme and a strong group identity among the beneficiaries lowers the cost of mobilisation and this coupled with tangible potential benefits of collective action (they receive the correct amount of money), ensures that it is in the interest of beneficiaries to come together and raise their voices to make the system accountable.[9] In fact, there is ample anecdotal evidence for this. The school students of various parts of Bihar have been reported organising 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.[10]

3.2 Trade-off between Increasing Responsiveness 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 programme would affect beneficiaries differently. An ideal cash transfer programme should take into account the varied needs of households. For instance, one could argue that the poor households should receive more money under this programme so that they do not have to borrow the additional money required to purchase a new bicycle from the 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 programme 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 programme, 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 (for example, above the poverty line, below the poverty line and Antyodaya group under the 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 programme responsive to the needs of the beneficiaries and the level of leakage and corruption.

3.3 Nature of Goods and Conditionality

The cash transfer programmes 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 immunised. Second, there are some utilisation conditions that require the beneficiaries to use the money for a specific purpose. There is a tendency among policymakers to impose multiple conditions without carefully assessing the costs and benefits of each condition. For instance, in case of the bicycle programme, the beneficiaries not only need to enrol themselves in Standard 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 programme 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—does not 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 utilisation 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 conflicts and/or self-control problems. For instance, an unconditional cash transfer programme that aims to improve the nutritional status of children or pregnant women may not be very effective due to the presence of intra-household conflicts. However, a bicycle is a visible good, for which peer pressure effects may be very strong and even in the absence of conditionality beneficiaries are likely to purchase a bicycle if other children in the village use a bicycle to go to the school.

4 Conclusions

The debate between alternative forms of transfers to the poor is not unique to India. The theoretical literature suggests certain key factors that are likely to govern the relative effectiveness of different ways of transferring benefits.[11] For example, if markets are relatively well-functioning, cash transfers make more sense than in-kind transfers. If they are not, then one has to trade off the advantages of in-kind transfers in reducing the transaction costs to the poor of accessing the relevant goods and services, with the leakages and corruption in the public distribution mechanisms. Also, if paternalistic concerns are important (for example, parents cannot be entrusted to be the best judge of the welfare of their children, due to imperfect altruism or information or gender bias) then putting a conditionality in the cash transfer seems intuitively more appealing.

However, we cannot debate the relative merits of these transfer programmes in the abstract. We need to understand the reasons as to why a particular transfer programme works or fails in a given empirical context. This was one of the primary aims of this study. The other goal was to provide some evidence on beneficiaries' preference between different forms of transfers—unconditional cash transfers (UCTs), conditional cash transfers (CCTs), and IKTs. This information would be potentially very useful in designing transfer programmes in a

way that responds to people's needs. For example, areas where market access is not easy, cash transfers 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), cash transfers may be a good way of empowering the beneficiaries.

The results from our 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 the determinants of beneficiaries' preferences suggests that the demand-side factors and village characteristics (accessibility of markets) play a dominant role in shaping beneficiaries' preference of cash versus kind, though a few supply-side factors related to how conditionalities are imposed also seem to matter.

NOTES

1 See Baird et al (2013) for a review of conditional and unconditional cash transfers in the context of developing countries, and Curry and Gahvari (2008) for a review of the evidence on in-kind versus cash transfers.

2 This scheme can be viewed as a conditional cash transfer and a conditional in-kind transfer depending on which element of the programme is used to define it. If the form of transfer is accorded primacy over what the funds are meant for, then this can be called as a conditional cash transfer. However, if we were to mainly focus on the fact that the transfer is essentially for buying a bicycle then this can be seen as a conditional in-kind transfer. In the Indian context, as the debate over the public distribution system (PDS) versus cash transfers has shown, the form of transfer has often been the main point of contention and also the basis for how a transfer programme is defined. Following this convention, we term the bicycle programme as a conditional cash transfer because the transfer takes the form of cash as opposed to kind.

3 However, given the nature of our survey, rigorous causal identification of the role of these factors is not possible and they should be interpreted as suggestive correlations.

4 The PPS method gave us the number of households to be selected from each village based on the total number of households in each village.

5 It is possible that providing benefits in the form of coupons/bicycles does not 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 programme guidelines if it does not offer any personal gains.

6 This result is similar to Nieuhas and Sukhantkar (2013) who find that a statutory wage increase in India's employment guarantee programme—MGNREGA—is not directly passed on to the workers.

7 Some of the supply-side control variables are not shown in the regression table due to space constraints.

8 These variables are not shown in the table due to space constraints. They are clubbed together under socio-economic demographic controls.

9 It is important to note that the beneficiaries of this programme tend to belong to relatively privileged families who are perhaps more vocal and in a better position to put pressure on school authorities in case they attempt to underpay the beneficiaries.

10 Another possible factor that helps in curtailing corruption under this programme is that the school authorities are supposed to ensure disburse the money to students on a pre-announced date, and to ensure that some local public representatives are present. This perhaps makes the transfer process more transparent and makes it difficult for school authorities to underpay the eligible beneficiaries.

11 See, for example, Curry and Gahvari (2008), Das et al (2005) and Ghatak (2015).

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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	1,568	1,967	-2,607	30,812	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