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

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Motivation for the study

- The ‘Mukhyamantri Bicycle Yojna’ is one of the very few ‘universal’ transfer schemes in India
- It has been projected as a successful programme by media but reports are based on anecdotal evidence
- Politically very popular and many other states are interested in replicating
- Very little hard evidence
- Muralidharan & Prakash (IGC working paper) has looked at the impact of the programme on enrolment rates
  - Bicycle programme has led to 40% (5 percentage points) increase in girls enrolment in secondary school
  - This paper doesn’t provide any information on logistics/quality of programme implementation

Main objectives of the study

- To ascertain whether the programme has really been ‘successful’
  - whether the money has reached intended beneficiaries?
  - Whether the money was used to purchase a bicycle?
  - Whether the beneficiaries liked receiving cash instead of a bicycle itself?
  - What are the determinants of beneficiaries’ preference for cash versus kind?
- To identify problems (if any) associated with implementation of a cash transfer programme
- Conjectures on mechanisms behind success – need for theory
- Cross sectional household level data- no attempt at causal identification
- Mostly descriptive statistics and some simple regression results

Summary of Findings

- The bicycle programme has performed very well in terms of coverage rate and curtailing direct forms of corruption
  - Only 3% of eligible beneficiaries did not receive it
  - 93% received the correct amount, the rest less
  - Only 9 percent of the households had any kind of grievances related to the programme
- Still a majority (55%) of the beneficiaries stated their preference in favour of receiving the benefits In-Kind instead of Cash
- A wide range of demand side (access to credit, distance from a bike store) and supply side factors (enforcement of conditions) seem to explain this heterogeneity in preferences
- Programme implementation on the ground differs considerably across districts in terms of level development
  - 99% in high HDI districts received cash; only 80% in low HDI districts(20% received bike/coupon)
  - More grievances in high HDI districts

Mechanisms Behind Success

- Universal – little scope for discretion.
- Visible object, one time transfer
- Beneficiaries are part of well-defined peer group – peer pressure
- Broader point about role of incentives that economists focus on
  - Individualistic model – mixed evidence
  - Recently recognition of role of intrinsic motivation etc
  - It can interact with peer pressure if applied in well-defined social groups
  - Some can respond to incentives, others can respond to peer pressure

Background: The Bicycle Programme

- This was launched in 2006 for all the girls enrolled in standard 9th in a government school.
- Under this scheme, all the 9th grade girls 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 has been increased to Rs 2,500 from 2011-12
- The money is disbursed by the school authorities in the form of cash or a cheque

Background: Bicycle Programme contd..

- Three conditions attached to the transfer
  - The beneficiary should be enrolled in 9th grade in a Government run/aided school
  - should have at least 75 per cent attendance rate (this conditionality was added in academic year 2012-13)
  - Submit a receipt as evidence of having purchased a bicycle
- Attempt to curtail leakage:
  - "I thought that purchase of bicycles through tenders might give rise to corruption in future. I thought handing over money through cheques directly to the beneficiaries would not only simplify the entire process but also make the scheme transparent" (Chief Minister of Bihar)

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
- All districts of Bihar were categorised in three groups (High HDI, Medium HDI and Low HDI) and two districts were randomly selected from each group
  1. Muzaffarpur and Lakhisarai (high HDI)
  2. Sheikhpura and Banka (medium HDI)
  3. West Champaran and Araria (low HDI)

Selected Districts

Survey Design

- PPS (Probability proportional to size) method was used to decide the number of villages in each group using the list of villages available from the census data
- The number of villages turned out to be 14, 7 and 15 for Group 1, Group 2, and Group 3 respectively.
- The villages were randomly selected from the complete list of villages from each group
- At village level, we first surveyed all households using a short questionnaire
- This village census helped us identify all the bicycle programme beneficiary households in each village

Survey Design

- Sample for the main household survey was drawn from these beneficiary households using random sampling
- PPS method gave us number of households to be selected from each village (based on total number of households in each village as per census data)
- In total we surveyed 840 households
- Many households had multiple beneficiaries so we have data for 958 beneficiaries

Results: Exclusion and Corruption

- The exclusion rate seems to be very low. Only 3 percent of the beneficiaries reported not having benefitted under the programme despite meeting the eligibility criteria
- Four potential channels of corruption
  - school authorities can inflate enrolment rate by adding ‘ghost beneficiaries’
  - potential beneficiaries can also enrol themselves in multiple schools
  - school authorities can transfer less than the entitled amount
  - the school authorities can provide coupons/bicycles to the beneficiaries instead of money and perhaps earn a commission from the bicycle stores

Results: Corruption

- Our data doesn't provide any evidence on the first two forms of corruption
- According to media reports Education Department detected around 3.36 lakh fake students in early 2012
  - Both students and school authorities can collude to siphon off money
  - This form of corruption can be controlled by increased monitoring from the top
  - The department has taken several steps such as creating master database of beneficiaries to curtail this form of corruption

Results: Corruption

- The programme has done well in terms of curtailing the third form of corruption – transferring less than the entitled amount.
- 93 percent of the beneficiaries received right amount of money
- 10 percent of the beneficiaries received coupons/bicycles instead of cash
- The phenomenon of providing coupon/bicycles is mainly concentrated in underdeveloped districts

Table 4: Form in which Benefitted under the programme

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

Results: Grievances

- Only 9 percent of the households had any kind of grievances related to the programme, which suggests that most of the beneficiaries were in general satisfied with the programme

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	100	

Was the bicycle purchased?

- Most of the households did buy a bicycle using the programme money
- 98 percent of the beneficiaries purchased a bicycle
- This might be biased as beneficiaries may not want to report that they ‘misused’ the programme money
- Our analysis suggest that the size of this bias is not likely to be very big
- Those who never purchased a bicycle using the school money are unlikely to report it while giving asset details
  - Households were not told that the focus of the study was only on bicycle programme
- We compare number of bicycles reported under ‘assets’ block that of ‘bicycle scheme’ block
- We do not find much discrepancy

Was the bicycle purchased?

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	

Cash versus Kind: Beneficiaries' preferences

- Despite a reasonably good performance of the programme, only 45 percent of the beneficiaries preferred cash over kind
  - We asked whether cash is a better option than receiving a bicycle itself.
- The stated preference is therefore hypothetical
- Beneficiaries' stated preference for cash versus kind is not only influenced by the functioning of the scheme underway, but also by their view of the alternative
- Most govt run in-kind transfers tend to perform poorly, and given this the 55% number preferring in-kind is interesting
- Could be that they feel cash will be inadequate needing top up
- Further reasons explored below

Is Cash a Better Option?

Table: Whether cash is a better option than 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: Variation in preference for cash across district categories

Is cash a better option than cycle	High HDI	Medium HD	Low HDI
No	73%	30%	47.16%
Yes	27%	70%	52.84%

Cash versus Kind: Beneficiaries' preferences

- So why do majority of the beneficiaries state preference for kind?
- A wide range of factors can shape their preference
- Can be broadly classified in two categories: Demand-side and Supply side
- Demand side includes factors relating to various household and village characteristics: income level, access to credit, distance from market
- Supply side includes factors that determine the effectiveness and efficiency of the programme from the delivery point of view

The Supply side

- The way a transfer programme is implemented can shape preferences
- Enforcement of conditions
  - Beneficiaries are supposed to submit a receipt after the transfer
  - Data shows that 30 percent of beneficiaries had to submit a receipt *before* receiving money
  - Receipt submission does not mean they actually buy the bicycle in advance (only 3% beneficiaries did this)
  - Most seem to arrange for a fake receipt (need to pay up around Rs 50)
  - Enormous variation across districts
- Only 28% of beneficiaries who had submit receipt beforehand prefer cash
- 52% for those who submitted the receipt after receiving the cash

Supply side: Conditionality

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	

Supply Side: delays in payment

- Ideally the transfer should be made within the first 6 months after enrolling in grade 9
- Half of the beneficiaries reported that they received the money after they had entered Grade 10th
- Interestingly, the delay in disbursement of money is substantially higher in high 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	

Supply side: Inadequacy of Transfer

- The data reveals that almost every beneficiary (98 per cent) had to add money in order to purchase a bicycle
- On an average the beneficiaries spent additional Rs 979 to purchase a bicycle.
- Rs 979 is partly a result of the fact that some of the beneficiaries may opt for expensive bicycles
- But even the cheapest bicycle costs around Rs 3100 so clearly the current amount of transfer is inadequate to purchase a bicycle

Demand Side

- Even a well-functioning transfer program may not satisfy all beneficiaries since some might be constrained by a variety of household specific factors
- Income: since most beneficiaries have to add money, their income level and access to credit can play a big role in shaping preferences
- About 25 percent of the beneficiaries had to borrow money to the additional money needed to purchase a bicycle
- Households with greater intra-household conflicts or self control problems may prefer receiving benefits in-kind as it works as a commitment device

Regression results

- Probit regressions where the dependent variable is whether the household think receiving cash is a better option than receiving a bicycle
- No causal inference can be made from these given the nature of the data – they provide some suggestive correlations only
- The way conditionality related to receipt submission is enforced matters
  - beneficiaries who had to submit receipt before the transfer were 20% less likely to prefer cash
- Beneficiaries belonging to the richer households are more likely to prefer cash over kind
  - They probably value the choice & the topping up is not costly for them
  - beneficiaries who had to borrow the additional money required to purchase a bicycle were 16 percentage points less likely to prefer cash over kind
- Accessibility to market is important: an increase in the distance from a bicycle store reduces the likelihood of preferring cash

Conjectures on mechanism behind success

- Why is bicycle programme marked with less leakage?
- Why is utilization rate so high?
- Need for an analytical framework that can help 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

Why is the ‘Bicycle Programme’ marked with lower leakage?

- Cash transfers have some inherent advantages in reducing the leakage
  - it removes the need for public procurement & transportation and therefore the authorities have lesser scope to divert the resources
  - 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
- Despite these other cash transfer programmes such as IAY continue to be plagued by corruption
- What is unique about the ‘bicycle programme’?

Why is the ‘Bicycle Programme’ marked with lower leakage?

- The universality ensures that the school authorities have no discretionary power in identifying beneficiaries and therefore little scope of extracting money from them.
- This programme manages to solve the collective action problem by design
  - the beneficiaries of this programme are part of an institution (the school) and identify themselves as group, and are in a continuing relationship
  - universality of program and a strong group identity among the beneficiaries lowers the cost of mobilization
- One time transfer - tangible potential benefits from raising the voice against irregularities.
- Beneficiaries belong to relatively well-off households who are more vocal
- Anecdotal evidence to support this

Why is utilization rate so high?

- Is this because of the strict enforcement of utilization condition (receipt submission)?
  - 98% beneficiaries submitted a receipt
  - It's easy to arrange a 'fake' receipt; it costs Rs 50-100
  - It's unlikely that need to submit receipts can ensure such high rate of utilization
- Peer pressure effect?
  - Bicycle is a visible good which induces strong peer pressure effect
  - This peer pressure effect can ensure that most beneficiaries end up buying a bicycle
- Need to take into account the characteristics of goods & services while designing a transfer programme
- Utilization conditions are hard to enforce (and can give rise to corruption)
- It should be used only for goods that are likely to consumed less than its optimal level due to factors such as intra-household conflicts and/or self-control problems/time inconsistencies

Towards an analytical framework for transfer programmes

- It can help us understand how different modes of transfer interact with various socio-economic factors to determine the outcomes
- Modelling the mechanisms through which the final outcomes come about, it would explicitly show the trade-offs involved while choosing between different types of transfer programs to achieve a particular goal
- The outcomes of a particular 'transfer programme' can be modelled as a function of several (interactive) processes
  - Intra household conflicts
  - Characteristics of goods and services
  - physical infrastructure and social and cultural norms of the region/community – e.g., access to markets

Conclusions and Policy Implications

- The bicycle programme has performed well in terms of coverage rate and curtailing direct forms of corruption
- Majority of the beneficiaries stated their preference in favour of receiving the benefits In-Kind instead of Cash
- A wide range of demand-side and supply side factors can play an important role in shaping beneficiaries' preferences
- Worth thinking whether to make the cash transfer unconditional on bike-purchase – let those who need it buy a bike
- The amount of transfers should be reviewed every year to ensure that it is sufficient to purchase a bicycle
- Households who live in remote villages should be compensated for the relatively high transportation cost they incur to purchase a bicycle.
- However, one should note that this creation of exceptions increases possibilities for implementing officials to misuse power and funds