Dishonest Politicians and Public Goods Provision

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Abstract

I study the effect of local politician's dishonesty on public goods provision in constituencies the politician represents. Using data from asset disclosure forms of candidates submitted prior to elections, I identify politicians as dishonest based on whether they evaded income taxes. I then employ a regression discontinuity design at the sub-district level to examine the effect of dishonest politicians on growth of public goods provision in closely contested constituencies. I find economically significant negative impact on social safety net measures and 1.5 percent lower per capita annual growth of school enrollment in constituencies with dishonest politicians compared to constituencies with honest politicians. I also find negative effect on road lengths, night-time light brightness and literacy rate in such constituencies, although at times imprecisely measured.

Keywords: Regression Discontinuity, Dishonest Politicians, Vote Margin, Bangladesh, Election.

JEL codes: C31, D73, D72.

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1 Introduction

In a democratic society, elected politicians have the discretion through public mandate to allocate and foresee development expenditure. In developing countries, where the resources are limited, it is extremely important to make sure that public funds are spent effectively. Dishonest politicians are likely to embezzle public funds for their private uses, thus hindering public goods provision and economic progress of the constituency he represents (Fisman et al. 2014, Pande et al 2012). On the other hand, through political patronage, dishonest politicians could increase public goods provision thus mitigating the affect of dishonesty on economic progress (Menes 1999, Banerjee 2014). Theoretically, it is also possible that honesty and competency could be negatively correlated, as a result dishonest politicians could be more competent (Caselli and Morelli 2004, Messner and Polborn 2004). With this backdrop, in this paper, I ask, does a constituency perform better if the elected politician is honest compared to one with dishonest politician? I develop a unique dataset from the asset disclosure forms of politicians, which contains their actual income, assets, educational and criminal records and whether they have submitted taxes or not. I asses a politician as dishonest, if a politician has income that falls in the bracket to provide minimum income tax, but he[2] has evaded it.

Bangladesh presents a unique setting to study this question. In 2009, a law was implemented in Bangladesh, that forces every candidate running for any public offices to disclose their income, asset, educational and criminal background. I am using this source of information to define dishonest politician in this study.

Comparing constituencies with honest and dishonest politicians may not yield causal estimates of having such elected politicians. I use a regression discontinuity (RD) design where the honest politicians win or lose election by a narrow margin and have come to power almost randomly[3]. My identification assumption is that otherwise similar constituencies get a dishonest politician versus an honest one by chance. The running variable

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[2]I am using the pronoun 'He' for the politicians. As my sample is predominantly male. One reason is that there is a reserved seat for Female Vice-Chariman in the Upazila thus mostly it is seen that Chairmen of Upazilas are Male.

[3]In recent times, papers focusing on electoral competition, have used RD design to elicit causal estimates (Asar & Novosad 2015, Prakash et. al 2015, Bhavnani 2014).

in my RD estimation is the winner's vote margin. Using this randomness at the cutoff, I show causal effect on social safety net programs (in terms of individual cash value) and growth of school enrollment of electing a dishonest politician in a constituency compared to a constituency that has an politician. In my results, with my preferred specification, I find that on an average a constituency with dishonest politician has Taka 200[4] less for an average individual than a constituency with a honest politicians. Similarly, 1.50 percent less school enrollment growth annually in a constituency ran by a dishonest politician compared to a honest one. Results are qualitatively similar under the choice of different bandwidth and robust to various specifications. I am using social safety net measures and school enrollment as the main economic progress indicator. Elected politicians in the sub-district have strong say over the allocation and use of different social safety net programs. Also the allocation of the budget from the central government that the local level politicians receive, they tend to spend them on education related development. Starting from building a school, expending school's grounds, arranging different scholarship programs, proving foods, uniforms, school materials etc. are considered as spending on education in which the local level politicians has strong discretion.

My paper relates to three strands of literature. First strand shows that traits such as competence and criminality of the politicians effect economic progress of the constituencies (Callen et al. 2015, Alcántara 2009, Prakash et. al 2015). Callen et al (2015) found in a large scale field experiment in Pakistan that personality traits of policy actors matters in overall policy outcome. Alcántara (2009) showed that in case of Latin American countries, political competence among politicians do matter for country level economic outcome. Prakash et. al (2015) found negative impact on economic growth if the politician has any criminal background. It is empirically challenging to pin down the dishonesty trait of politician due to lack of information. A central contribution of my study is that I construct a unique way to identify dishonest politicians by using tax evasion. Secondly, I found causal effect of dishonest politicians on public goods provision using the data I assembled. My paper complements this literature by using a novel trait

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[4]Equivalent to USD 3, and a daily wage for a day-laborer in Bangladesh)

among politicians and finding the causal impact on public goods provision.

The second strand of literature relates to mostly theoretical papers that deals with competency and dishonesty of politicians and their selection mechanism (Basely, Pande and Rao 2003, Messner and Polborn 2004, Caselli and Morelli 2004, Vaisnah 2017). The theoretical models of these papers indicate that bad politician would more likely to run for offices than good politicians. In terms of dishonesty, theoretically dishonest politicians could be more competent. I am broadly adding to this literature by providing empirical evidence of causal impact of dishonest or bad politicians on the constituency level policy outcomes.

Thirdly, my paper fits in another strand of recent literature, that has used asset disclosure data of politicians in developing countries (Fisman et al. 2014, Bhavnani 2016, Asher and Novosad 2015). They used the asset data of Indian politicians after the asset declaration was made mandatory from 2003. The major finding is that a winner of a close election is using the power of the office to earn extra-legal money, which is a clear sign of corruption. I am adding to this literature by asking whether those constituencies where elected politicians are dishonest have less public goods provision.

The rest of the paper proceeds as follows. In section 2, I talk about disclosure laws and forms, elections in Bangladesh and Upazila specific outcomes. In section 3, I discuss the definition of dishonest politicians using information from asset disclosure forms. In section 4 through 7, I discuss the validation of my RD design, my estimation strategy, results and robustness checks, respectively. In section 8, I conclude by mentioning my future plan for this project and the field experiment I am planning to do next year.

2 Background

2.1 Asset Disclosure Law and Upazila Elections

In 2009, a new law regarding asset disclosure of the candidates competing in elections was passed in Bangladesh. This law makes it mandatory for every candidate competing in national or local body elections to declare their own and family's asset information

along with education, criminal records, occupation and other related information.

Figure-1 shows the administrative geography of Bangladesh. The focus of the paper is on the Sub-districts (Upazilas), where the elected politician is known as Upazila Chairman, who holds office for 5 years term, and is supported by Upazila executive committee, where the other members are also elected [5] [6].

There were two national parliamentary elections since 2008, and two Sub-District elections in 2008-09 and 2013-14[7]. In every election, the candidates have filed their own and family's asset information and made a mandatory disclosure.

The Upazila Chairman has discretion over the government fund allocated to those Upazilas under each fiscal year's budget. Any development related work done at this administrative has to be overseen by the Upazila chairman. Thus whether a Chairman is dishonest or not can have a significant bearing on the economic progress of the Upazila.

2.2   Close Elections

Figure-2 shows the distribution of constituencies under close winning margins. It is important to note that the election in general is very competitive. According to the distribution, 249 sub-districts are included in within 10 percent winning vote margin, which around 50% of all the sub-districts. It is also suggestive that these elections are not rigged by the incumbents. Having close elections is a prerequisite to run RDD in political economy setting such as this work. Given the distribution that I have for the winning margin, empirically it is feasible to use vote margin as running variable in the RDD.

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[5]Under the recent law, a candidate can not run under the political banner of the national parties. However, voters do know their ideological preferences given these candidates do have history to work with some particular political party.

[6]In general, Bangladesh has two major parties, the ruling government is the central-left party and the main opposition is the center-right party.

[7]Elections normally occurred at the end of the years in December, results get out in January of the following year.

2.3   Asset Disclosure and Tax Returns Forms

There are mainly three different forms that a candidate has to submit to the election commission to get nomination. One is a form of affidavit, where mainly the candidate mentions his income, occupation, education and criminal background related information. In the second form of sources of income and assets, the candidate discloses elaborately all the sources of income and different categories of tangible and intangible assets and their values. He also mentions all related information about income and assets of his family members in that form. The last form is about his tax return. In that, given he has submitted income tax, there is information about his total asset, income and total tax that he has given. Example of these forms are provided at the Figure section. (Figure-3 and Figure-4)[8]. These forms are only available on the Election Commission website exactly the way it is shown in the Figure section. I have manually extracted these and digitalized them.

3   Defining Dishonest Politicians

My objective in this paper is to find the causal impact of dishonest elected politicians tenure on the economic progress of that constituency and comparing them with constituencies with constituencies with honest politicians. I am using tax evasion based on the income the politician has stated in the affidavit forms[9].

The declaration of the disclosure law in 2009 came as a surprise and that helps me to use tax evasion to pin down dishonest politicians. In June 2009, the income tax return was due, and in December 2009 the election was held. Thus the affidavits of income and asset came after the tax submission. Dishonest politicians evaded tax and could not change it later on. The mandatory law of disclosures came to effect for the first time that year, so politicians were caught off-guard[10]. With this motivation, I use the following

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[8]I have hidden some of the information in the Appendix that could be sensitive.

[9]Definition based on asset growth used in previous literature has the problem that asset grow may be due to economic progress, which is the outcome I am interested in.

[10]The punishment of not paying the tax is not that heavy and being a Upazila Chairman, a person can use his position to avoid any legal consequences.

definition to to figure out dishonest politicians.

Definition 1:   A politician is dishonest if he has more than or equal to Taka 265,000/300,000 but did not submit his mandatory Income Tax, subject to occupations.

So in this definition, if income is Y and tax amount is t, the variable $dishonest = 1$ if $Y > 265,000/300,000$ and $t = 0$, otherwise $dishonest = 0$

According to income tax law in 2008-09, a person was exempted from income tax if his or her income was less than Taka 265,000/300,000[11]. Thus, in my sample of 493 Upazila Chairman, if someone did not have an income over Taka 200,000 and did not submit his tax return, then he is not identified as dishonest. It is worth noting that this income information I am using is from the affidavit form, as in his tax return form, he has shown less than the threshold income for paying tax. I have incorporated family income in the definition as well because the politicians might want avert taxes by transferring income to family members. For example - he might own a business in his wife's name.

According to definition, I have the following distribution:

Table 1: Dishonest Versus Honest Politicians

	2009-10	2014-15
Dishonest	47 %	32.8 %
Honest	53 %	67.2 %

Notes: There are total of 478 Sub-districts got election in 2009. 14 upazila chairman did not have their information on asset and income available on the website, either they submitted it after deadline or there was misinformation in their affidavits and they lost their candidacy. 10 upazilas elections were withheld for different political and legal reasons. So far I have incorporated 290 Chairman from 2014-15, due to re-contest.

3.1   Robustness of the Dishonesty Definition

In the RD design, I use dishonest winners on the left of the cutoff and honest winners on the the right of the cutoff. I track the 2009 runner ups, who have competed in 2013-14 Upazila election, among these 118 competed in the 2013-14 election. Also, I have found that out of 249 winners (within 10% winning margin) in 2008-09, 127 have competed in 2013-14 election. I collected both of these two groups asset information of

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[11]USD 1 was equivalent to Taka 70 in 2009.

2013-14. Table-2 shows that the winners on an average have higher total income and total asset compared to the runner ups. This validates the results of Fisman et. al (2014) and Bhavnani (2012) that in close elections the winners of those elections accumulate higher wealth compared to the runner ups.

Table 2: Income and Asset information of 2014 of Winners and Runner-Ups of 2009

Variable	Winners of 2009	Runner-Ups of 2009	Difference
Total Income in 2014	2.2 (1.3)	0.71 (1.4)	1.52 (1.47)
Total Asset in 2014	8.2 (2.5)	7.08 (1.4)	1.12 (3)
Number of observations	127	118	-

Notes: In million of Taka. 1 USD = Taka 70 in 2010. Standard errors in the parenthesis.

Table-3, I show that in 2014 the dishonest winners of 2009 have, on an average, more income and assets compared to honest winners of 2009. Specially, in terms of total assets, the dishonest winners have around $124,025 more than honest ones. This result bolster my definition of dishonest politicians that I have used for my analysis.

Table 3: Income and Asset information of 2014 of Dishonest and Honest winners of 2009

Variable	Dishonest Winners	Honest Winners	Difference
Total Income in 2014	5.2 (4.1)	0.77 (0.2)	4.51 (2.9)
Total Asset in 2014	15 (8.0)	5.08 (0.7)	9.97* (5.5)
Number of observations	87	40	-

Notes: In million of Taka. 1 USD = Taka 70 in 2010. Standard errors in the parenthesis.

The second set of tests is regarding the the preexisting conditions of the honest and dishonest politicians, and of all the upazilas. According to my definition of dishonest politicians, it is important to find some meaningful differences in their income and asset records. The following table provides those evidences. I can see that the income and assets of the dishonest politicians are higher on average and statistically significant. This also gives validation to the definition of dishonesty that has been used in the paper. Interestingly, the wealth record that has been collected from the tax-return document

shows the honest politicians have more wealth than the dishonest, unlike the affidavit form. However, the difference is insignificant. This also implies that there is a high possibility that the dishonest politicians have misreported about their wealth in the tax returns forms.

Table 4: Pre-determined Characteristics of Candidates

Variables	Honest	Dishonest	Difference
Income declared in Affidavits	0.39	0.77	-0.33***
Total Asset in self-declared form	3.3	5.5	-2.2*
Total Wealth in tax return form	3.23	2.21	.991
Tax Paid	34,795.91	0	34,795.91***
Years of Schooling	13.6	13.4	.22
Past Criminal Records	.47	.4	.07
Current Criminal Records	.192	.293	-.10**
Number of observations	210	195	-

Notes: ***, **, * denote 1 percent, 5 percent and 10 percent level of significance, respectively. The unit of monetary measure in this paper is Taka (BDT). USD 1 = Taka 70. I have used family members' income and asset information to generate the total asset and income of the candidate. As it is claimed that dishonest candidates could try to avert their illegal income to their family members account. The first three variables are in million of Taka.

Another important finding from this table is that dishonest politicians are just as educated as the honest politicians. It also confirms that the main results of the paper is not driven by competence of the politicians. The second to last row in the table shows that compared to honest politicians, the dishonest politicians had 10 percent more criminal records and it is statistically significant. Thus there is somewhat a loose correlation between the politicians having criminal records and being dishonest.

3.2   Spatial Variation

Figure-6 demonstrates the spatial distribution of constituencies with dishonest versus honest politicians. There is significant spatial variation in income and education in east and west of Bangladesh. But it is notable that dishonest politicians are not selectively represented in east or west.

4 Data and Validity of RD

4.1 Economic Outcome Variables

The variable that I am going to use as my main public goods provision indicator is growth of school enrollment. As mentioned earlier, a Upzaila Chairman has control over allocation and use of education related investment in his Upazila[12].

Ideally, total allocation and use of development budget in a Upazila could be a good indicator of public goods provision. However, there is no such information available directly at the Upazila level. From the Ministry of Finance, I came to know that there are a number ways a development budget is prepared for a Upazila. A Upazila Chairman receives funds from a allocation to Member of Parliament (MP) of the constituency, where that Upazila is included. There are a number of development projects run by donor agencies in cooperation with Ministry of Finance, Local government and Rural Development Ministry and some other ministries from which a Upazila receives development funds. Now, the only way to know about each Upazila's total accumulated development fund and use of it, is to collect information from the Upazila Nirbahi Office (Executive office of the government at the Upazila level)[13]. The Upazila level variables that I am using here are collected from community series of Bangladesh (2001-02). That is the only Upazila level information available prior to 2008 Upazila election .

Another important variable could be information on infrastructural projects, specially lengths and quality of roads. As Upazila chairman is directly related to oversee those funds and the use of it. Dishonest politicians have the chance to embezzle those funds, as a result the infrastructural progress of those Upazilas could get halted. Again, Upazila level information on roads length is only available for 2016, thus I am not able to see the growth of this variable in the period between 2008 to 2013. But as proxy for infrastructural development, I have used that in robustness checks[14]. I have used night time light data as another outcome variable. This GIS data is available for the year 2007

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[12]Bangladesh current literacy rate is around 62 percent and it has District-wise variations.

[13]I am working on that with the ministries and hopeful to gather that information in near future.

[14]My current work is to get spatial satellite images of roads in 2009 and 2015. This would be an ideal variable to measure public goods provisions.

and 2013, which is exactly matching with the tenure of the Chairmen of my concern. But, there are couple of drawbacks of using night time light data. In total 35 Upazilas' information are missing in the night time light data due bad coverage. Also, the five year period from 2008-09 to 2013 might be too small to have significant variations.

5   Empirical Strategy

5.1   Identification under Regression Discontinuity (RD)

The following strategy is used to have the causal estimate under regression discontinuity design:

In my analysis, the treatment is if a politician is dishonest, he gets value of 1, otherwise 0. Lets say, $D = 1$ if politician is dishonest and $D = 0$ if honest. Lets X_i be the margin of votes for victory in the Upazila election of 2009. c is the cut-off point and $c = 0$. Then,

$$D_i = \begin{cases} D_i = 1, & \text{if } X_i \geq c \\ D_i = 0, & \text{if } X_i \leq c \end{cases}$$

Lets say, Y_1 and Y_0 are growth of school enrollment in dishonest and honest constituencies, respectively. Then at the vicinity of the cut-off, I am able to identify the causal effect of treatment according to the following way:

$$\beta_{RDD} = E[Y_1 - Y_0 | X = c]$$
$$= E[Y_1 | X = c] - E[Y_0 | X = c]$$
$$= \lim_{x \to c} \uparrow E[Y_1 | X = c] - \lim_{x \to c} \downarrow E[Y_1 | X = c]$$

The following are the identifying assumptions that I need to make to have the causal estimate:

$Y_1, Y_0 \perp\!\!\!\perp D | X$

and

$0 < P(D = 1 | X = x) < 1$ [In my case of Sharp RD, this assumption is met]

mentioned above, there are two main concerns about validity of RD design, in the following section I discuss them in detail.

5.2 Manipulation test: Density estimate at the cutoff

The first test of validity is the test for a jump at the cutoff of in the density of the running variable. The concern is that vote margin is non-smooth at the cutoff due to rigging of elections by the dishonest politicians[15]. This test implements a check at the cutoff, whether there is a statistically significant discontinuity of the forcing variable. The running variable is the winning margin of votes. On the right side of the cutoff, it is the difference as a percentage of total votes of a honest winner over a runner up. On the left hand side of the cutoff is the difference as a percentage of total votes of dishonest winners over a runner up. Figure-7 shows that the discontinuity is not statistically significant above and below the cutoff.[16].

The second test is to to see whether the known characteristics of the Upazilas are continuous at the cutoff, this is mainly the seconds test of validity of RD design (Imbens and Lemieux 2008). The goal of this test is that the characteristics of constituencies with dishonest Charmian could be different from the constituencies with honest Chairman in the overall sample, but they should not jump around the cutoff, the only exception is the treatment itself, which in this case jumps from 0 to 1 from moving right from the left of the cutoff (Sharp RDD). Table-5 shows the differences of the characteristics of honest and dishonest constituencies in the pre-election period[17]. As I can see, mostly all the variables' differences are statistically insignificant besides literacy rate. This could be due to couple of Upazilas that are located in peri-urban areas and have significantly high literacy rates. Those Upazilas have fallen into the category of dishonest constituencies. Both tables 3 and 4 give the setting that I need to go ahead with RD estimation.

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[15]Previously, in RD literature, it was known as the McCrary (2008) density test. In recent development, the most popular test is known as the Cattaneo, Jansson, and Ma (2017a) density test.

[16]This test employs Polynomial order of 2 and the bandwidth is selected by the following criterion (Cattaneo, Jansson, and Ma (2017a)) for the restricted model (where h is the bandwidth): $h_{comb,p}^{\hat{R}} = \min[h_{diff,p}^{\hat{R}}, h_{sum,p}^{\hat{R}}]$

[17]I have calculated the night-time light brightness using GIS data under ARCMap.

Table 5: Descriptive Statistics of Pre-determined Characteristics of Upazilas

Variables	Honest	Dishonest	Difference
Total Population	240,661	223,204	17,456
	(11115)	(14247)	(19258)
Literacy Rate	41.2	44.23	-2.9*
	(.7)	(1.1)	(1.4)
Electricity access	22.4	23.3	-.87
	(1.3)	(2.09)	(2.4)
Tube-well access	81.7	81.9	-.16
	(1.5)	(2.3)	(2.7)
Sanitary-Toilet access	30.6	29.6	.95
	(1.5)	(1.9)	(2.5)
School Enrollment	48,465.2	44,364.4	4,100.8
	(2127.7)	(3046.3)	(3772.3)
Average Night-time light Brightness	1.53	1.46	.071
	(.26)	(.22)	(.41)
Number of Observations	171	75	

Notes: ***, **, * denote 1 percent, 5 percent and 10 percent level of significance, respectively. Standard errors in the parenthesis.

The eight separate variables are used and presented in Figure-8 to check for the continuity at the cutoff. Left of the cutoff are the Upazilas with honest Chairman and right of the cutoff are the Upazilas with dishonest Chairman. Every dot represents a Upazila and the curves are local linear regression fit. There are two curves separated by the cutoff. The curves are derived using triangular kernel and optimal bandwidth calculator proposed by Imbens and Kalayanaraman (IK)(2012). So, Upazila level characteristics, such as literacy rate, school attendance, percentage of households with electricity access, percentage of households with sanitary toilet access and percentage of households with tube-well water access, do not vary at the cutoff and the change at the cutoff is not statistically significant. Also, the average luminousness that I have captured from GIS data do not vary at the cutoff and this is of year 2007, which is right before the Chairman got elected for a particular Upazila. The last two figures are of total electoral votes (taken in log) in 2008-09 Upazila election and total population (taken in log) of the Upazila. This two variables are also not statistically different at the cutoff. These validity checks confirm the that the identification under RD should elicit the causal effect of having a dishonest politician on constituency level public goods provision.

5.3   Regression Discontinuity Design

In my RD design, on the right side of the cutoff of the running variable, I would be having the constituencies where there were honest winners in 2009 election. On the left side of the cut off would be the constituencies of dishonest winners of 2009 election, and it would be be denoted as negative. My major dependent variable here is the growth of school enrollment adjusted for the total population of the Upazila. The optimal bandwidth (IK) gives a choice of 19.612 percent vote margin[18]. If the dishonest politicians under provide public goods, there would be a discontinuous jump at the cutoff. But if the alternative hypothesis holds, then there could be no jump or fall, suggesting dishonest politicians did not negatively effect the outcome or could have had even positive effects. So here at the cutoff the status of the politicians gets changed from dishonest to honest (1 to 0). Closer to the cutoff, the victory margin becomes very small, thus the outcome of the election becomes as good as random. As a result, constituency that has voted for a honest politician becomes a counter-factual for a constituency that has voted for a dishonest politician at the small margin of votes.

I use the following regression equation to estimate the RD effect of electing a dishonest politician compared to a honest one.

$$Y_{dt} = \alpha_d + \beta dishonest_{idt-1} + f(VoteMargin_{idt}) + \epsilon_{dt}, \qquad (1)$$

where, $\forall VoteMargin_{idt} \subset (c - h, c + h)$

Here $(Y_{dt}) = log Y_{dt+1}$ - $log Y_{dt}$, which measures the individual cash value of social safety net programs/annual growth of school enrollment in a constituency over the period of 2010 to 2015 for SSNP and 2002 to 2012 for school enrollment[19]. h would be the bandwidth choice that will determine the neighborhood around the cut off, c. $f_{VoteMargin}$ is a semi or non-parametric continuous function. In this setup, β will give me the causal impact of electing dishonest politicians relative to honest ones on the public goods provision

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[18]The bandwidth choice varies depending on the kernel and polynomial choice of the control function.
[19]This could be a potential problem as the period of the data do not coincide exactly with the tenure period, I address this issue in my future plan section.

of constituencies.

6 Results

6.1 Dependent variable: Social Safety Net Programs

To evaluate whether dishonest politicians are having negative impact on development of his constituency, I need to come up with variables that are closely related to the activities of the Upazila chairman. Social safety net programs (SSNP) is such kind of measure in the case of Bangladesh. 12 percent of all the households in Bangladesh are under any kind of SSNP. Specially in the rural areas and poorer households receive support from government under SSNP. 2.5 percent of GDP & 13.2 percent of total budget on an average of Bangladesh goes to SSNP. There are 50 different programs running under SSNP. Scholarship programs for education at the primary and secondary level, different kinds of food programs, household benefit programs for elderly, women empowerment programs etc are under SSNP. Among all these programs, many of them fall under direct jurisdiction of the Upazila chairman. Dishonest politicians can severely misuse these funds for own benefits thus leaving the households under the program vulnerable. I have used three main variables related to SSNP to understand the impact of having dishonest politicians - Total households under SSNP in a upazila, total amount of cash received by a household in upazila, payment/bribe to receive SSNP by average household in an upazila. Before going to the RD estimates, the following table provides linear estimation using weighted least square fixed effect method. To have statistical significance under RD, I need statistical power coming from sample size. Because the number of upazilas are limited, it can be the case that I might not be able to find statistical significance under RD. Table-6 shows that in all the three variables, constituencies under dishonest politicians are having negative impact.

Figure-8 provides prima facie evidence of my results. The Y axis of the figure is the average cash value recived by a person in a household under SSNP (adjusted for the population of the upazila) in constituencies over the period of 2009-2015 at the

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Upazila level. The running variable in the X axis is the margin of votes for the winner in percentage term of total votes in the election of an Upazila in 2008-09. The cutoff is at 0 and on the right hand side of the cutoff are the constituencies which had honest elected politicians. On the left side of the cut off are the constituencies which had dishonest politicians as their elected Chairman. Each dot represents the sample average of a bin. The solid lines depict a polynomial regression function that uses triangular Kernel and the optimal bandwidth formula proposed by IK(2012). The RD figure shows a sharp discontinuity at the cut off. On an average, a single person in a typical household belonging in a constituency under dishonest politicians receives Taka 200 (equivalent to one day wage of a day-laborer) less than a person in a typical household living in a constituency under honest politicians.

Table 6: Results: Impact of having dishonest politician

WLS FE	No.of HH	Total Value	Bribe Amount
Dishonest Constituencies	-1.064	-24.26	48.3
	(0.48)	(0.48)	(1.12)
Mean	15.48***	339.6***	263.7***
	(8.17)	(9.42)	(9.11)
Observations	346	255	177
Upazila Specific Control	Yes	Yes	Yes
District Fixed Effect	Yes	Yes	Yes

In Taka; 1 USD = 75 Taka
t statistics in parentheses
* p <0.05, ** p<0.01, *** p<0.001

6.2 Dependent variable: School Enrollment

Figure-9 provides results with school enrollment growth as a dependent variable. The Y axis of the figure is the yearly growth of school enrollment (adjusted for the population of the upazila) in constituencies over the period of 2002-2012 at the Upazila level. The running variable in the X axis is the margin of votes for the winner in percentage term of total votes in the election of an Upazila in 2008-09. The cutoff is at 0 and on the right hand side of the cutoff are the constituencies which had honest elected politicians. On the left side of the cut off are the constituencies which had dishonest politicians as their elected Chairman. Each dot represents the sample average of a bin. The solid

lines depict a polynomial regression function that uses triangular Kernel and the optimal bandwidth formula proposed by IK(2012). The RD figure shows a sharp discontinuity at the cut off. Moving to right from the left of of the cutoff sharply increases the annual average growth rate of school enrollment at the Upazila level, which denoted by the vertical distance of the two lines at the zero vote margin. On an average this figure is suggesting that there is around 2 percent increase of growth of school enrollment in the honest constituencies compared to constituencies that had dishonest politicians. To put it into economic context, the average school enrollment per year in a upazila is around 1500 students per Upazila. The average growth is around 4 percent per year in upazilas with honest politicians. Upazilas under dishonest politicians are having around 2 percentage point less growth than the honest ones, which definitely is economically significant.

The following table shows the result of estimating equation-1 that I have described above. Before moving to the RD estimates, it is important to see the parametric results, as in the RD estimation power could be an issue to interpret the results and also this gives an opportunity to see whether district fixed effect matters or not. Panel-A shows parametric results, where OLS is insignificant, but fixed effect shows significant result and also the effect increases in magnitude to 2.9 percent. It bolsters the point that variation with the districts is important to control to seek the effect of having dishonest politicians on school enrollment. In the political economy literature, 5 percent vote margin is considered as close election. Column-3 of Panel-A shows that the effect is very high in the Upazilas where vote margin is less than 5 percent. The RD estimates shows that the negative impact remains in the result and magnitude varies from 0.8 percent to 1.5 percent depending on the choices of bandwidth [20].

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[20]the RD literature, specially in those using margin of vote as forcing variable, the three most used bandwidth(BW) choices are IK by Imbens and Kalyanaraman (2012), CV formula by Ludwig and Miller (2007) and CCV by Calonico, Cattaneo, and Titiunik (2017). All these three uses different optimization formula to come up with the optimal bandwidth size.

Table 7: Effect of having a dishonest politician on Growth of school enrollment

Panel A (Parametric) Growth of School Enrollment	(1) OLS	(2) Fixed Effect	(3) Close Margin
Dishonest Constituencies	-.017	-.029*	-.109***
	(.014)	(0.016)	(.044)
Other Controls	Yes	Yes	Yes
District Fixed Effect	No	Yes	Yes
Adjusted R-squared	.18	.23	.69
No. of Observations	373	373	98
Panel B (RD) Growth of School Enrollment	(1) Triangular	(2) Triangular	(3) Uniform
Dishonest Constituencies	-.015	-.010	-.008
	(.032)	(.030)	(.027)
Bandwidth Size	19.612	21.308	14.958
Bandwidth Type	IK	CV	CCT
No. of Observations	336	341	281

Notes: **, *, * denote 1 percent, 5 percent and 10 percent level of significance, respectively. the growth of school enrollment has been adjusted to the upazila level population.Column-3 of Panel-A uses 5 % winning margin as close elections.

7 Robustness Checks

7.1 Alternative Dependent variables

In this section, I try to show that using different dependent variables besides growth of school enrollment, the effect of dishonest politicians on public goods provisions in constituencies remains negative. Road length [21], growth of night-time brightness and growth of literacy rates, all show negative effect of having a dishonest politicians. These are other public goods measure that I have data of. These results also support the finding of the negative causal effect. However, the statistical insignificance could be due to fact that I am underpowered here.

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[21]I will have the data of road lengths at the upazila level of 2015, thus it only shows level effect. I am trying to get pre period data on road length.

Table 8: Robustness Checks: Alternative Variables

Dependent Variables	(1) Road Length (in K.M.)	(2) Growth of Night-Light Brightness	(3) Growth of Literacy Rate
Dishonest Constituencies	-85.104	-0.038	-0.284
	(102.548)	(0.052)	(.193)
Bandwidth Size	10.91	10.45	9.44
District Fixed Effect	Yes	Yes	Yes
Bandwidth Type	CCT	CCT	CCT
No. of Observations	244	190	200

Notes: The 1st dependent variable is Total road Length in an Upazila in 2016, the unit of measure is Kilo-Meter. For (2) and (3), everything is in yearly growth. All the standard errors from regression 1 to 3 are clustered at the District level and presented in the parenthesis. The RD estimates have used from column 1 to 3 have used triangular Kernel. **, *, denote 1 percent, 5 percent and 10 percent level of significance, respectively.

8   Conclusions

I have used a novel approach to define corrupt politicians and found out using RDD that there is a economic cost of electing corrupt politicians to represent a constituency. I have found that the annual growth of school enrollment is 1.68 percent lower in constituencies that have elected corrupt politician compared to constituencies with non-corrupt representative. However, the results do not posses strong statistical significance for few reasons. The time span of the major outcome variable is different than the tenure period of the elected politicians. This I am trying to get hold of the data that will suit the purpose. However, it is indeed indicative that there is a negative impact of having a dishonest politician on local public goods provision.

There could be a number of underlining reasons behind the negative causal effect of corrupt politicians. One thing that I have already mentioned, that the Upazila Chairman is allocated a healthy budget every year to spend on Educational infrastructure and also on students' development in terms of providing monetary and in-kinds benefits. Now, a corrupt politician is highly likely to embezzle the fund for his private gain. As a result development projects might not be able to take places in those Upazilas effectively, inhibiting a better school enrollment rate growth in those Upazilas.

It also important to understand if there is any heterogeneous effect on different corrupt Upazila. There are couple of ways to do that. Firstly, I could see whether the corrupt politicians belong to the ruling party. It could be the case that belonging to ruling party, there is high possibility to do corruption, as they might have the power to avoid consequences of getting caught just being a member of the ruling party, Bhavnani (2016) found similar results. However, the party affiliation is not mentioned in the disclosure forms. So, now I are trying to get that information from other sources to do this particular analysis.

Another aspect could be the timing issue for certain candidates of the election of 2009. Though there is no barrier of the times for a politician to run for elections and rule a Upazila, there could be other reason for it to be his last election. Firstly, it could be due to age. Secondly, it could be that the Upazila Chairman could move up the ladder and compete in national parliamentary election. For these reasons, if a Chairman knows that 2009-2013 would be his last term, there could be high possibility of being corrupt and this behavior is recorded in the literature. Again, I am trying to get this information and incorporate that in my analysis.

The potential drawback of my analysis is lack of data on major outcome variable, as I have mentioned. Now, I are trying to incorporate the 2013-14 election data to enrich my analysis statistically with more sample. Another aspect that I have mentioned before, I need some other measures of Upazila level outcome like central fund disbursement and use of it. This would be directly related to Upazila Chairman's discretion, specially the use of funds. Also, I need to know the total number of development programs taken by a Chairman in a year and how many of them have successfully completed. These information are available in the Ministry of Finance, I am in touch with them to get hold of all these mentioned information. Also, I have only worked with the Definition-1 that I have proposed, I would also like to see how the results change if I use Definition-2.

One could argue that corrupted politicians should not be defined with dummy variable that takes a value of 0 or 1. Corruption could be defined by its degree as well. If I could use the asset information to find the degrees or the intensity of corruption then

I could see how that have an effect on economic outcome of constituencies. It could be possible in that context that there could be a optimal level of corruption for the economic benefit of the constituency. I leave that for future research.

Identifying corrupt politicians have been extremely hard due to lack of formal information. Asset disclosure law gives us a chance to do that. Mostly, I see cross-country evidence of the impact of corruption on economic progress of a country. my paper shows that corruption among politicians do have a negative causal effect on the economic activities of a constituency. Though, I did not have much statistical power to boost my main findings due to sample constraint, using different specifications and a number of economic outcome variables, I was able to show that there exists economic cost of electing a corrupt politician.

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Figures
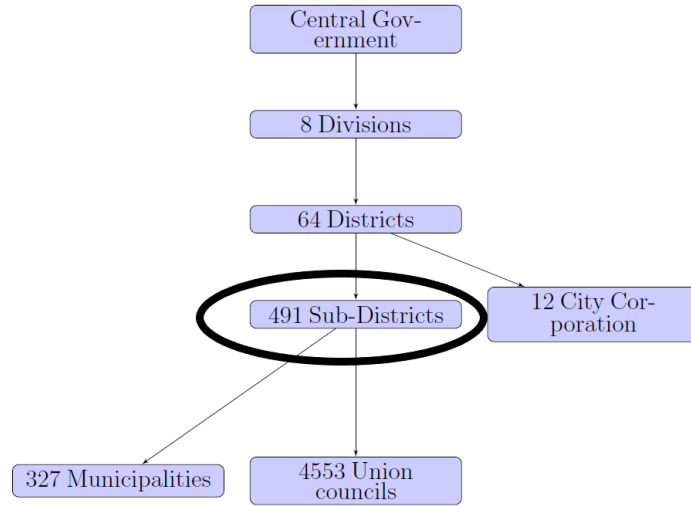
Figure 1: Administrative geography of Bangladesh
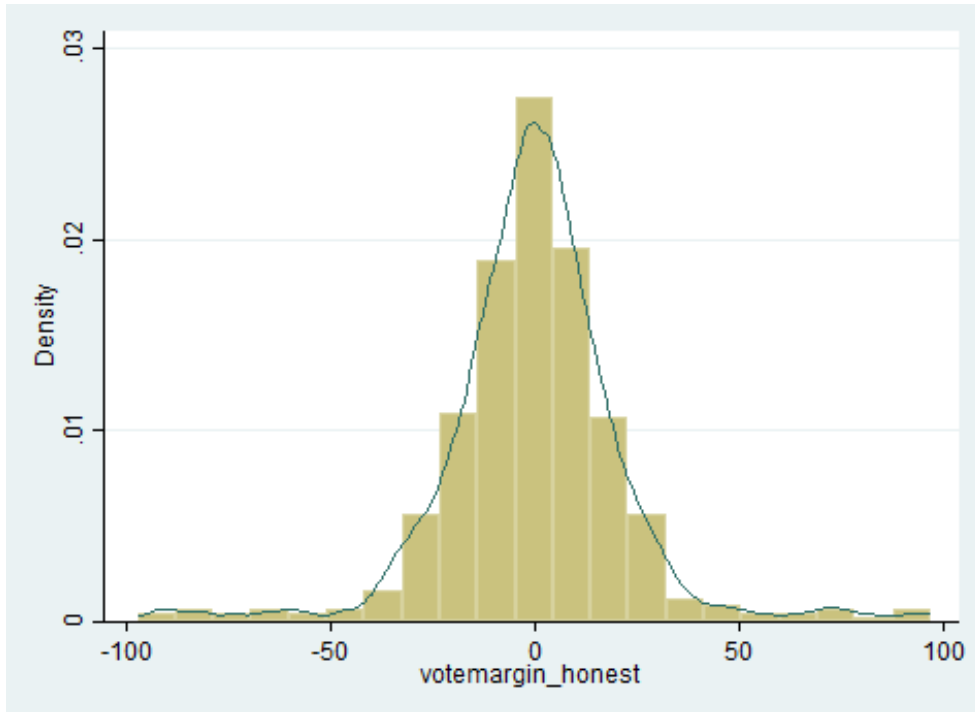

Figure 2: Histogram of winning vote margin

Figure 3: Example of Affidavit form

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

৳৫০ ৳৫০

পঞ্চাশ টাকা

২৬৭২৮৬১

(সীল: Advocate Md. Abdul Matin Khan, Notary Public, Whole of Bangladesh, Natore)

৬. আমার, আমার উপর নির্ভরশীল ব্যক্তি/ব্যক্তিবর্গের এবং আমার স্ত্রী/স্বামীর পরিসম্পদ এবং দায়ের বিবরণী ঃ

(ক) অস্থাবর সম্পদ

ক্রমিক নম্বর	মনোনয়নপত্র দাখিলের তারিখে সম্পদের ধরন	নিজ নামে	স্ত্রী/স্বামীর নামে	নির্ভরশীলদের নামে
১	নগদ টাকার পরিমাণ	১,০০,০০০/=	প্রযোজ্য নয়	প্রযোজ্য নয়
২	বৈদেশিক মুদ্রার পরিমাণ (মুদ্রার নামসহ)	প্রযোজ্য নয়	প্রযোজ্য নয়	প্রযোজ্য নয়
৩	ব্যাংক ও আর্থিক প্রতিষ্ঠানে জমাকৃত অর্থের পরিমাণ	প্রযোজ্য নয়	প্রযোজ্য নয়	প্রযোজ্য নয়
৪	বন্ড, ঋণপত্র, স্টক এক্সচেঞ্জে তালিকাভুক্ত ও তালিকাভুক্ত নয় কোম্পানীর শেয়ার (পরিমান, অর্জনকালীন সময়ের মূল্যসহ)	প্রযোজ্য নয়	প্রযোজ্য নয়	প্রযোজ্য নয়
৫	পোস্টাল, সেভিংস সার্টিফিকেটসহ বিভিন্ন ধরনের সঞ্চয়পত্রে বা স্থায়ী আমানতে বিনিয়োগের পরিমাণ	প্রযোজ্য নয়	প্রযোজ্য নয়	প্রযোজ্য নয়
৬	বাস, ট্রাক, মটরগাড়ী ও মটর সাইকেল ইত্যাদির বিবরণী (পরিমান, অর্জনকালীন সময়ের মূল্যসহ)	মটর সাইকেল ১টি মূল্য-৮৬,০০০/-	প্রযোজ্য নয়	পুত্রের মটর সাইকেল ৩টি, মূল্য- ২,১৪,০০০/=
৭	স্বর্ণ ও অন্যান্য মুল্যমান ধাতু ও পাথর নির্মিত অলংকারাদি (পরিমান, অর্জনকালীন সময়ের মূল্যসহ)	প্রযোজ্য নয়	প্রযোজ্য নয়	প্রযোজ্য নয়
৮	ইলেকট্রিক সামগ্রীর বিবরণী (পরিমান, অর্জনকালীন সময়ের মূল্যসহ)	মোবাইল ১টি, ফ্রিজ ১টি ও ফ্যান ২টি মোট মূল্য-৪০,০০০/=	প্রযোজ্য নয়	পুত্রের মোবাইল ৪টি, ফ্যান ৮টি, ফ্রিজ ২টি মোট মূল্য-১২,০০০/=
৯	আসবাবপত্রের বিবরণী মূল্যসহ	খাট ২টি, ড্রেসিং টেবিল ও ষ্টীল আলমারী ১টি মোট মূল্য- ৭০,০০০/=	প্রযোজ্য নয়	খাট ৪টি, ড্রেসিং টেবিল ৪টি ও আলমারী ৪টি মোট মূল্য- ১,২০,০০০/=
১০	অন্যান্য	প্রযোজ্য নয়	প্রযোজ্য নয়	প্রযোজ্য নয়

(নির্ভরশীলদের সংখ্যা অধিক হইলে অতিরিক্ত কাগজে তথ্য প্রদান করিতে হইবে)
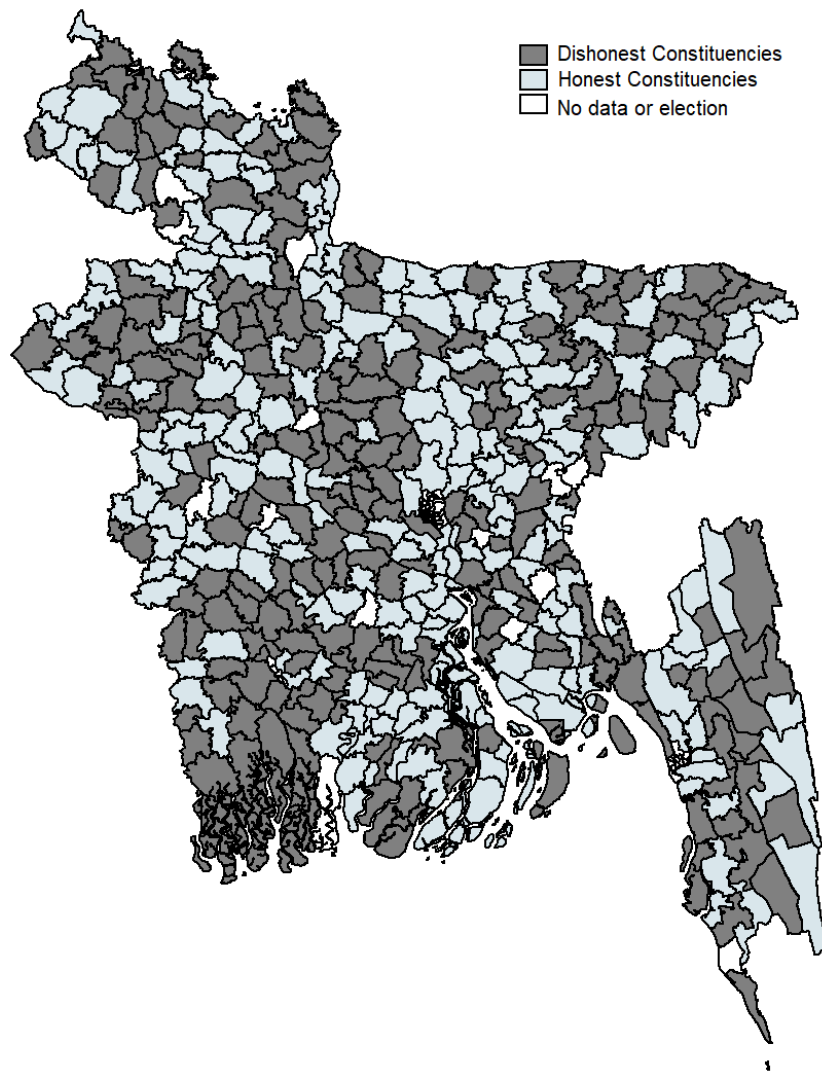
Figure 4: Example of Tax Return Form

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Figure 5: Spatial distribution of constituencies with dishonest and honest politicians

Note: Dark Grey ones are the constituencies with dishonest politicians. Light Grey ones with honest politicians, and White ones do not have any data.

Figure 6: McCrary test of Density around the cutoff of the Forcing variable, Margin of Victory
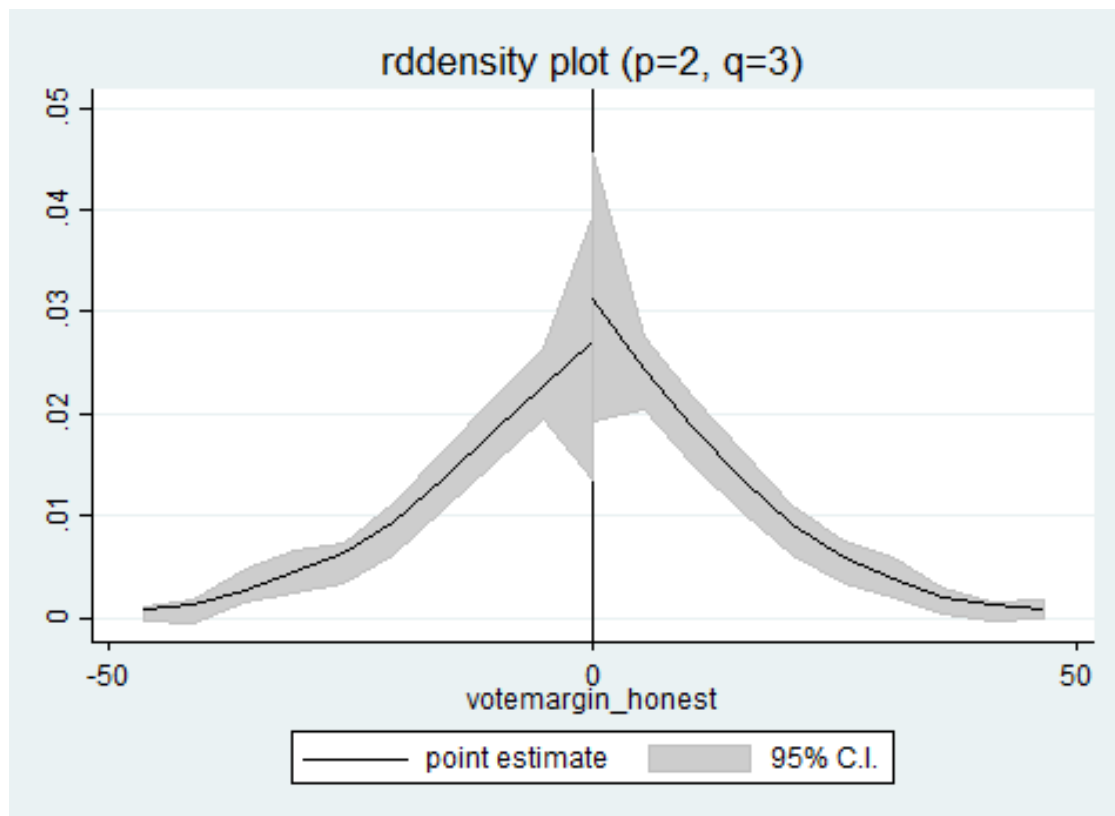
Note: The p value is : 0.5074. We do not reject the null of continuity at the cutoff.

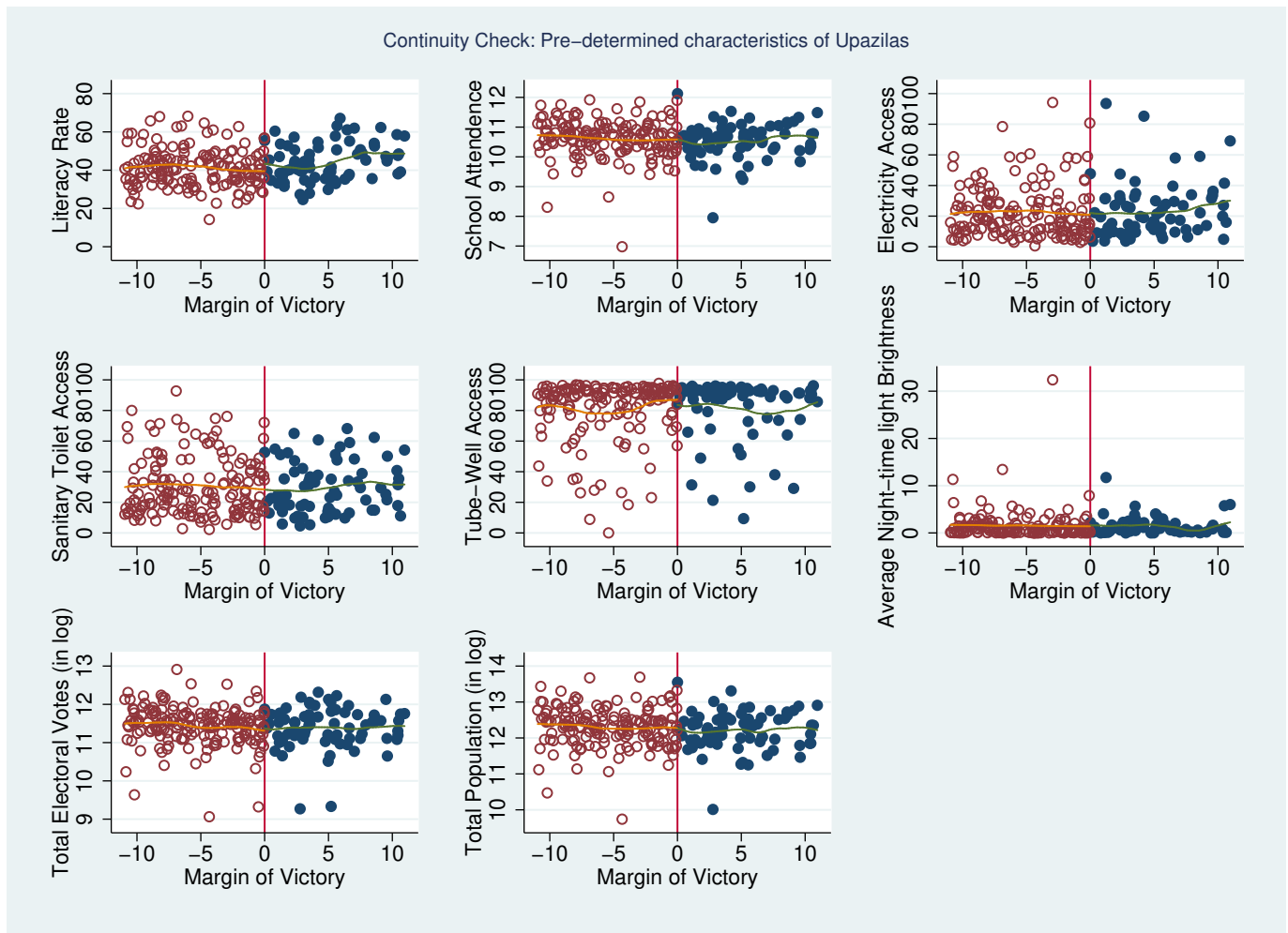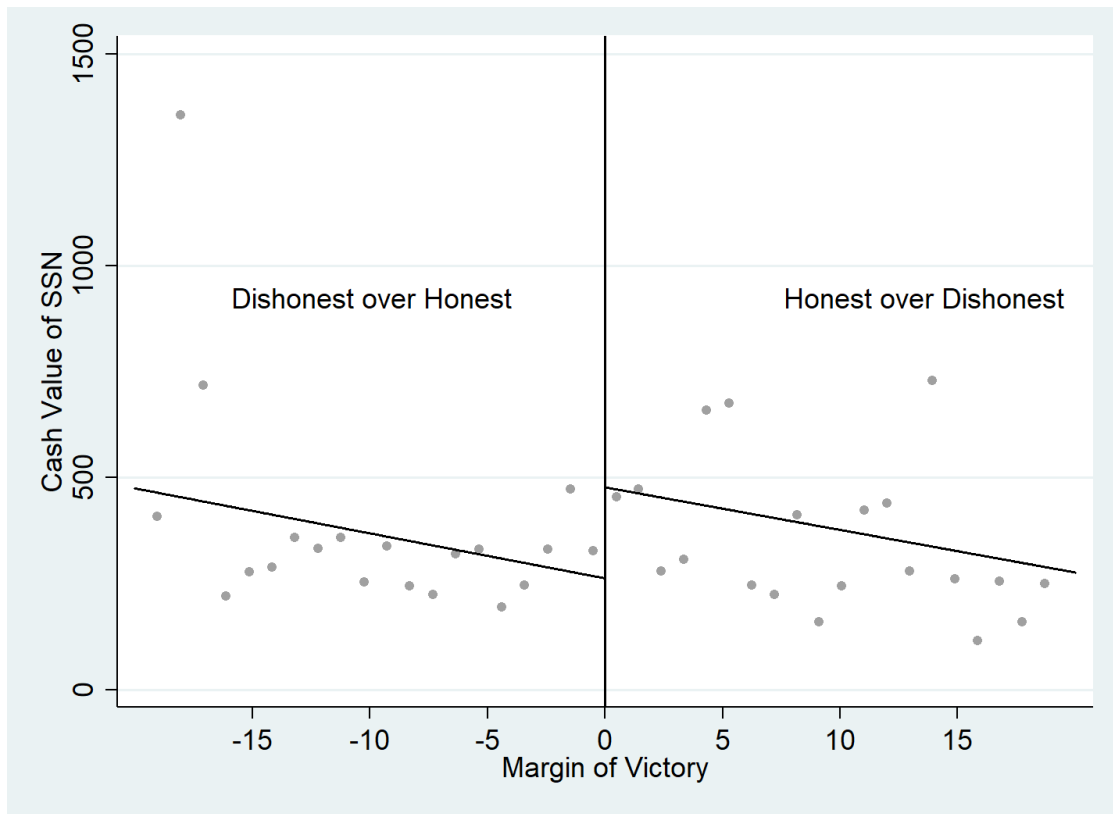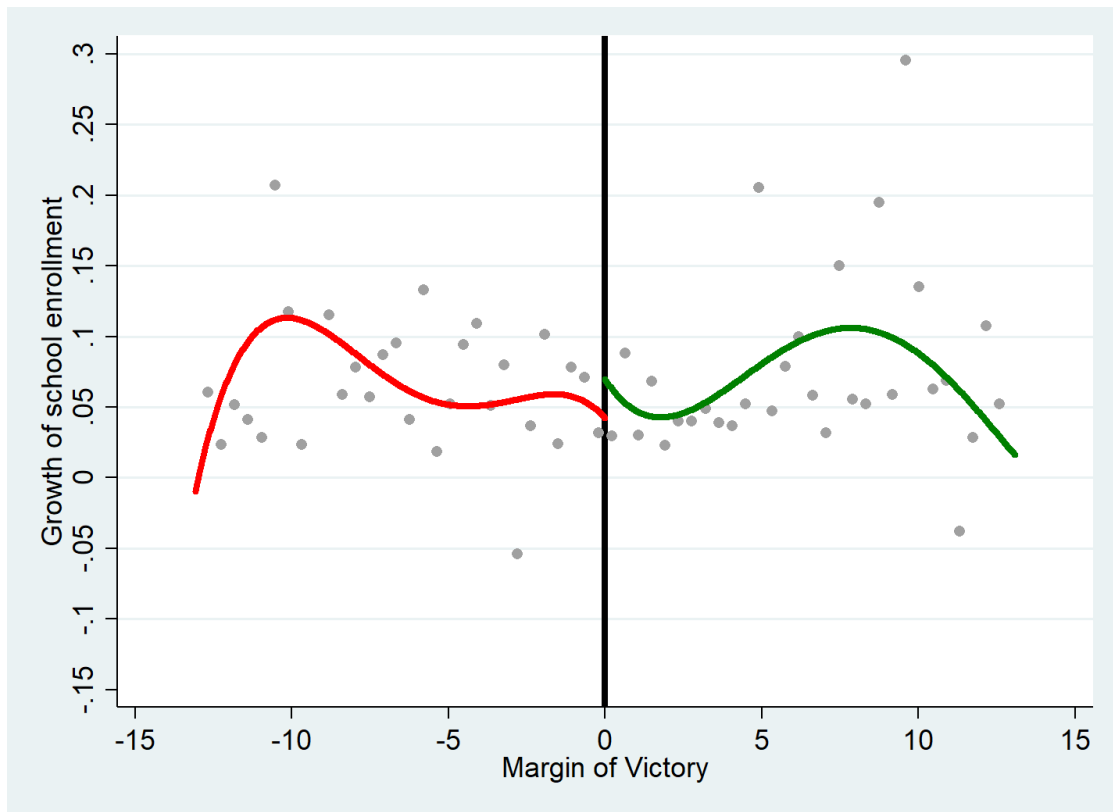Figure 7: Manipulation test of Density around the cutoff of the Forcing variable, Margin of Victory

Figure 8: Results: RD plot

Notes: The dots in every plot is average growth of school enrollment of each bin. The bin size has been chosen by evenly spaced variance using polynomial regression. In both Polynomials orders, we see there is a sharp vertical discontinuous jump at the cutoff

Figure 9: Results: RD plot

Notes: The dots in every plot is average growth of school enrollment of each bin. The bin size has been chosen by evenly spaced variance using polynomial regression. In both Polynomials orders, we see there is a sharp vertical discontinuous jump at the cutoff