THE EVOLUTION OF REGIONAL REPRESENTATIVENESS IN THE ADMINISTRATIVE CADRE SERVICE OF BANGLADESH

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Abstract

The regional diversity in civil service may foster more equitable distribution of public resources and an increase in innovative service delivery. Before 2018, the government of Bangladesh relied on the districts' share of population as a tool to ensure regional variation in the civil service. There is no systematic research in the existing literature exploring the effects of different types of quotas on the representativeness of bureaucracy in Bangladesh. In this study, we attempt to address this gap in the literature and explore to what extent the population share based quota system contributes to improving the representation of underserved regions of the country. It is found that the districts' share of population and share of freedom fighters play a major role in determining the regional representativeness in the BCS administration cadre. Among the socio-economic factors, university completion rates of the districts are found to be positively correlated with the districts' share of officials, while the sign of the coefficient on the poverty rates of the districts changes from positive to negative.

Keywords: Regional diversity, Civil Service, Quota system

Introduction

The administrators play a significant role in the formulation and implementation of policies, through which they can affect the lives and livelihood of the citizens. They are the permanent, appointed (and thus unelected) officials in charge of shaping policies. In doing so, they can exercise a great deal of discretion (Lowi, 1969; Meier & O'Toole, Jr., 2006). This particular ability of the bureaucrats as unelected officials to exercise discretion has remained a key focus of research in public administration. Representative bureaucracy has been proposed as one such instrument of ensuring responsible use of discretionary power.

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Affirmative action has emerged as an important tool to facilitate the representation of marginalized groups so that the bureaucracy becomes more representative. As Daley (1984) argues, if representative bureaucracy is considered as a theoretical concept, then affirmative action is one effort of 'operationalizing it'. In fact, "affirmative action directly challenges the problem posed by the statistical unrepresentativeness of the public service" (Daley, 1984: 5). Studies have shown that affirmative action programs or policies generally increase the representativeness of the bureaucracy and, in general, it has a positive effect on bureaucratic performances (Naff & Crum, 2000; Bhavani & Lee, 2019; Sunam, Pariyar & Shrestha, 2020). However, the decision to design or implement affirmative action policies is political in nature, and due to this inherent role of political factors, the types and natures of affirmative action may vary across countries. In the context of Bangladesh, Quota Reservation Policy was embraced by the government just after the independence of the country and it continued till 2018. Whereas several studies were carried out over the years to evaluate the quota reservation policy, these studies were mostly critical of the policy especially due to its alleged detrimental effect in establishing a merit-based bureaucracy. These studies, at the same time, have raised concerns about the effectiveness of the quota policy in ensuring the representation of the backward population groups. However, up to this point in time, no systematic effort has been taken to explore the impact of quota policy on ensuring the representativeness of the bureaucracy.

This paper attempts to fill this gap in the literature and makes an effort to explore the impact of the quota policy in facilitating the representativeness of marginalized poverty-prone communities. In doing so, we have specifically focused on the 'district quota' and tried to examine whether district quota ensured regional diversity within the bureaucracy which eventually led to higher representation of the relatively 'poorer' districts. We have attempted to test the key assumption made by several studies on the district quota and based on that, the key research question that we ask is- did the district quota, as it was implemented, ensure the representation of economically backward regions of the country within the civil service?

In the next section, we briefly review the literature on representative bureaucracy and affirmative action focusing on how these two concepts are linked with each other. The third section specifically focuses on Bangladesh's experiences with the quota reservation policy. We discuss the process of district quota distribution and summarize the key arguments of existing literature regarding the effect of district quota on facilitating representation of the economically backward regions. Section

four discusses the data used in this study. In the remaining sections, we test those assumptions and draw our conclusions.

Representative Bureaucracy and Affirmative Action: Linking the Two Concepts

The concept of representative bureaucracy was first introduced by Donald Kingsley (1944), and he argued that government would be successful in upholding democratic values and representing citizens if it becomes 'representative', i.e., if the government mirrors its population in terms of skills, belief, and class. The idea of representative bureaucracy was further expanded by Levitan (1946) and Long (1952) as they presented it as the most important instrument to ensure the appointed and unelected officials' responsibility and accountability to the citizens (Bishu and Kennedy, 2019). However, they did not explain how increased representativeness of the civil service would positively affect the citizens. Mosher (1968) pointed out that the socialization process that an individual bureaucrat experiences plays an important role in shaping his values and ideas, and consequently, when s/he joins the civil services, his values, and sympathies to his/her community interacts with his understanding of 'professional roles and responsibilities'. Therefore, if a bureaucracy becomes representative of the society it serves, it is likely that not only the minority client will be served by the minorities but also their complaints, necessities, and concerns will be better addressed.

In his work, Mosher categorized representation into two types- active and passive representation. A bureaucracy, according to him, ensures passive representation when it mirrors the demographic origins of the population of the country it serves, especially in terms of race, gender, ethnicity, social class or other characteristics. The expectation is- if passive representation is ensured, the bureaucracy will be protected from 'capture' and will essentially be a 'symbol' of inclusivity and democracy (Bowling, Kelleher, Jones, & Wright, 2006; LeRoux, 2009; Moldovan, 2016). This idea of representative bureaucracy has become popular and in the last 30 years, several studies have been carried out in different parts of the world showing that passive representation indeed gets translated into active representation. In other words, studies have shown that if the bureaucracy of a country reflects the socio-economic characteristics (measured by income and occupation of parents of the civil servants joining public service), gender, racial, and ethnic composition of the society at large, the bureaucracy will be more sympathetic, citizen-friendly, responsive and will show empathy while ensuring access to service for the marginalized population (Keiser et al. 2002; Kennedy 2014; Selden 1997; Sowa and Selden 2003; Riccucci & Van Ryzin, 2017).

Affirmative action has been broadly defined as programs or policies that aim at addressing past and present inequalities and argue in favor of preferential treatment toward marginalized groups so that they can be included in the "social and political sphere from which they are otherwise excluded". In their metanalysis of affirmative action policies, Harrison et al (2006) have categorized them into four groups-

- Opportunity enhancement affirmative action, where instead of offering preferential treatment, the focus is on encouraging people from marginalized backgrounds to apply for public service jobs. In this case, policies are taken to provide special training or mentoring programs for the left behind groups;
- Equal opportunity affirmative action, where the focus is to ensure that marginalized groups do not face any discrimination while being considered for jobs due to their background;
- Weak preference policies, where people from marginalized groups receive preferential treatment if their overall qualifications match with that of the people having an advantaged background.
- Strong preferential policies- in this case, the state takes special measures to ensure the representation of marginalized groups by reserving positions for them or introducing quota policies (Harrison et al, 2006).

In recent work, Sunam, Pariyar & Shreshtha (2021) dropped equal opportunity from the categorization of affirmative action policies and instead concentrated on the remaining three. In this paper, we have largely focused on strong preferential affirmative action policies as that is how the Government of Bangladesh decided to ensure the representation of marginalized groups within the civil service.

It is, however, important to note that whereas affirmative action policies may take different forms in different parts of the world, the majority of South Asian countries have focused on strong preferential treatment policies by taking measures to reserve seats/ positions for marginalized groups. India, for example, has a reservation policy that has been practiced for over 65 years. Nepal, on the other hand, adopted a preferential treatment-based affirmative action policy in 2007. And, as mentioned earlier, Bangladesh's quota reservation policy, though evolved, has been in operation since the birth of this country (Raina, 2006; Gudavarthy, 2012; Sunam, Pariyar & Shreshtha 2021).

In this paper, we have focused on one specific dimension of the quota reservation policy, i.e., the district quota. District quota aims at ensuring regional diversity within the civil service and to facilitate the representation of all the districts of the country, it considers the share of the population of a district as the determinant factor. The question, therefore, is- does the effort to facilitate regional

representation (i.e., district-based representation) affect the representativeness of the bureaucracy? Surprisingly, literature on representative bureaucracy has remained mostly silent about this. Grissom et al (2009) suggested that a regionally diverse civil service represents the interest of diverse groups of communities scattered throughout the country. However, Grissom et al (2009) made an important observation- ensuring representation of different regions within the civil service must have a purpose and should not be considered as an end itself. Instead, the concentration on regional representation will only lead to a representative bureaucracy if it allows representation of the backward or the marginalized groups within the civil service.

Therefore, in the context of Bangladesh, where the quota reservation policy heavily relied on population-share based district quota (and thus concentrated on making the bureaucracy more regionally representative) questions remains whether the district quota succeeded in ensuring regional representation and if so, whether that allowed representation of economically backward regions within the civil service. Before testing that, we need to explore how the quota system emerged and evolved in the context of Bangladesh.

Regional Representativeness and Quota Reservation Policy in Bangladesh

In Bangladesh, a strong preferential-treatment oriented quota reservation policy was adopted in 1972 through an office memorandum circulated by the Establishment Division (currently known as the Ministry of Public Administration). According to that policy, all government service jobs were supposed to be "…filled in district-wise according to the population of the districts" (Khan & Ahmad, 2008: 7). Merit-based recruitment was allowed only in 20 percent Class I posts and positions. Whereas 30 percent posts were reserved for freedom fighters and 10 percent was reserved for women affected by the liberation war of 1971, this was allowed subject to the condition that "…this 40% quota should be calculated on an overall basis without affecting the district quota" (Khan & Ahmad, 2008: 7). Interestingly, this policy was designed and implemented before the constitution of the country was adopted. The 1972's constitution guaranteed equal opportunities for all citizens of the country in civil service jobs and stated that citizens would not face discrimination due to their race, caste, religion, ethnicity, sex or place of birth. However, the constitution also included a clause where it allowed the state to take special measures to support any backward section of citizens "…for the purpose of securing their adequate representation in the service of the republic" (Khan & Ahmad, 2008: 8). In other words, the constitution envisioned a representative bureaucracy and offered strong preferential treatment as a tool for ensuring that representation.

Important to note that in devising a preferential treatment-oriented policy, the government relied on population share-based district quota and justified this choice by arguing that in the then civil service of Bangladesh, government posts and positions were being filled by people coming from very few specific districts. The poverty-prone, economically backward districts had a very limited representation and henceforth, district quota would ensure higher representation from the backward population which eventually would lead to a representative bureaucracy. This particular point of view remained dominant before the quota system was abolished in 2018. Whereas the number of merit-based recruitment within the Class I posts and positions increased gradually (from 20 percent in 1972 to 40 percent in 1976 to 45 percent in 1985), for quota distribution, the concentration always remained on district-based representation where the share of population of the districts was taken under consideration. For instance, in 1985, when merit-based recruitment reached at 45 percent district quota stood at 55 percent which further "…superimposed on by special quotas, which are 30 percent for freedom fighters' children, 10 percent for women, and 5 percent for ethnic minority". Like the past, these specific quotas were calculated and distributed without affecting the district quota (Siddiqui, 2006; Jahan, Shahan & Biswas, 2008; Yesmin, 2010).

Studies conducted on the quota policy of Bangladesh had been largely critical of this policy and concentrated on two issues- first of all, Khan & Ahmad (2008) argued that population share-based district quota did not ensure the representation of the backward population groups and from this perspective, district quota violated the constitution. According to them, the constitution talked about adequate representation of the backward section of the citizens and not the '…proportional representation in the public service on the basis of population for each district" (Khan & Ahmad, 2008: 15). Furthermore, population share based district quota cannot ensure that relatively more economically backward districts will have a higher a representation. Secondly, these studies also argued that district quota was failing to ensure regional diversity and in effect, was turning into divisional quota (Jahan, Shahan & Biswas, 2008; Yesmin, 2010).

Whereas criticisms against the quota system was well-accepted in literature, interestingly, these studies relied on anecdotes, newspaper reports and individual experiences. No systematic attempt has been taken so far to test whether district quota indeed ensured regional diversity and whether that diversity allowed higher representation from the economically backward regions or districts.

Data

This study focuses on regional diversity in the distribution of BCS administration cadre officials who were recruited from the 20th to the 35th BCS examinations held between 2001 and 2017. The main variable of interest is the share of each region in the distribution of BCS admin cadre officials. The representativeness of bureaucrats from different regions is analyzed both at the division and district levels. The information on district and division for each bureaucrat were obtained from the database of training recipients at the BCS Administration Academy (BCSAA). The BCSAA dataset used in this study contains information of 3164 admin officials who were recruited from 20th to 35th BCS (excluding 23rd, 26th and 32nd BCS) examinations.

We use the Population Census (PC) 2011 to construct the Population Share of the districts. In addition to population share, the districts' share of freedom fighters is also an important determinant of the districts share of the BCS admin officials. To construct the share of freedom fighters in each district, the list of freedom fighters' data available on the website of the Ministry of Liberation War Affairs have been used. The data on the districts' share of ethnic population are obtained from the Population Census 2011.

As forty five percent of the officials were recruited from the merit list, during the period of study, the share of districts in the distribution of admin officials also depends on the number of candidates who attended the examinations from each district. However, the number of candidates at district level is not available. To address this issue, the status of educational attainment of a district measured by the university completion rates (among 18 years or above) has been used as an alternative variable. The expectation is that the higher the university completion rate of a district the greater is the number of potential candidates from each district. The data on university completion rates among adults, *percentage of adults who have completed university,* were used from the World Bank's Bangladesh Interactive Poverty Maps.

Two key measures of poverty status of a district are used from the poverty maps of Bangladesh: poverty headcount ratio (%), and extreme poverty headcount ratio (%). These two indicators show the percentage of population living below the upper and lower poverty lines respectively.

District level poverty estimates are also used from the online database, Bangladesh Interactive Poverty Maps, which reports the data from the poverty maps of Bangladesh 2010. The Poverty Maps of Bangladesh 2010, was launched in August 2014, where the poverty estimates were generated by using both the Household Income and Expenditure Survey (HIES) 2010 and the Population Census 2011.

The second report on sub-national level poverty estimates, Poverty Maps of Bangladesh 2016, was published on December 2020, that combines the HIES 2016 with the PC (2011) to construct the poverty estimates. According to the 2016's report, the poverty estimates (head count poverty rates, HCR) at national, division and district level are generated directly from the HIES 2016, while that of Upazila level poverty rates are generated by using the small area estimation technique.

Regional Variation in Representativeness

Here the regional diversity is analyzed at district and division level based on the reported home districts of Admin officials. To understand the regional diversity in administrative cadre service, we first show the distribution of officials by division. Table 1 shows the divisions' share in the distribution of admin officials based on the information of officials from 20th to 35th BCS batches.

Table 1: Distribution of BCS officials by Division

| Division Name	Share (28-35BCS)	Share of Population (2011)	Poverty Rate (2016)	Poverty Rate (2010)
	(1)	(2)	(3)	(4)
Barisal	8.4	5.7	14.5	26.7
Chittagong	20.3	19.7	8.7	13.1
Dhaka	25.4	25.3	7.2	15.6
Khulna	13.6	10.9	12.4	15.4
Mymensingh	7.9	7.6	17.6	.
Rajshahi	11.3	12.8	14.2	16.8
Rangpur	9.7	10.9	30.5	27.7
Sylhet	4.3	6.9	11.5	20.7

Source: Authors' calculation based on BCSAA Data

To explore how the division's share of admin officials perform relative to the division's share of population and poverty status of the division, these factors are also reported for each division. In general, the representation of each division is conformable with the share of the division's population except for Sylhet division. In particular, the share of Dhaka, Chattogram, and Mymensingh divisions in admin officials are 25.4%, 20.3% and 7.9% percent respectively, which are consistent with Dhaka's (25.3%), Chattogram's (19.7%) and Mymensingh's (7.6%) share in total population based on Census 2011. Rajshahi and Rangpur slightly fall behind in representativeness relative to their population share, whereas the share of Sylhet division (4.3%) is less than two third of its share in total population (6.9%). On the other hand, the proportions of Barisal (8.4%) and Khulna (13.6%) divisions are

better than their share in total population. In terms of poverty rates in 2010, it appears that the divisions having lower poverty rates have managed to achieve shares that are close to (i.e. Dhaka, and Chattogram) or marginally higher than their population share. While divisions with relatively higher poverty rates have lower representativeness compared to their population share, this is reversed in the case of Barisal division with 26.7% of the population living below the poverty line in 2010. Figure 1 shows the trend in divisional distribution by period.

Figure 1: Distribution of BCS officials by Division and BCS Groups
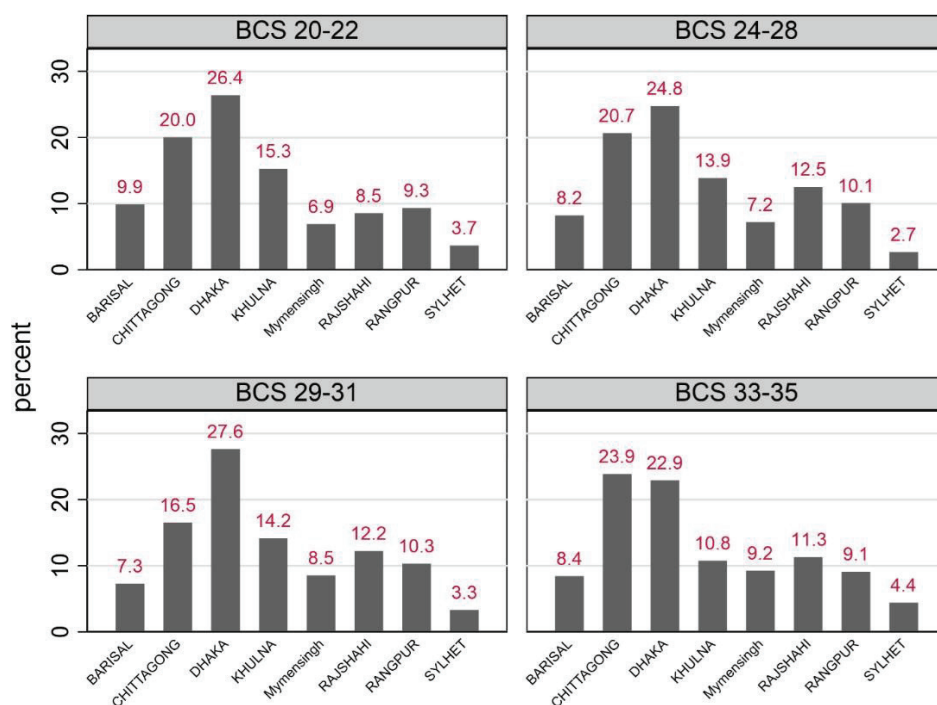
Source: Authors' calculation based on BCSAA Data

Figure 1 shows the divisions' share of admin officials over time divided into four different periods: BCS 20th-22nd, BCS 24th-28th (excluding 26th), BCS 29th-31st and BCS 33rd-35th. It appears that in each period there is wide variation across districts as observed in the case of overall share of the divisions. Here, the divisions' share of admin officials also varies across periods. In particular, the share of Dhaka and Chattogram divisions portray higher level of fluctuations than the other divisions. Interestingly, the share of Dhaka division dropped from 27.6% in the 3rd period to 22.9% in the 4th period, whereas that of Chattogram division increased from 16.5% to 23.9% over the same period. Overall, the divisions' share

of admin officials hovers around the divisions' share of population reflecting the influence of regional quota in the distribution of admin officials.

Disparity Between Districts Within Divisions

Although the distribution of admin officials at division level is conformable with the distribution of population across divisions, it remains unknown whether and to what extent the shares of districts vary within divisions.

Table 2: Distribution of BCS officials by Districts within Divisions

Division	District	Districts' Share of Officials	Districts' Share of Population	Division	District	Districts' Share of Officials	Districts' Share of Population
Barishal	Bhola	9.0	21.5	Mymensingh	Sherpur	10.8	12.4
	Barishal	31.8	27.9		Mymensingh	45.6	46.5
Chittagong	Bandarban	0.9	1.4	Rajshahi	Joypurhat	4.8	5.0
	Cumilla	23.2	18.9		Sirajganj	19.7	16.9
Dhaka	Shariatpur	3.1	3.2	Rangpur	Panchagarh	6.2	6.3
	Dhaka	26.8	33.1		Dinajpur	20.5	18.9
Khulna	Meherpur	1.4	4.1	Sylhet	Moulvibazar	21.1	19.3
	Khulna	17.5	14.7		Sylhet	27.5	34.4

Source: Authors' calculation based on BCSAA and Survey Data

Table 2 reports the districts which have the lowest or highest share in a particular division along with its share in population within its corresponding division. One of the main reasons for such large variation at district level is the population share of a particular district as the BCS batches that are analyzed in this study were recruited under the quota system. Similarly, the number of freedom fighters and ethnic minorities may also influence the variation in the share of districts. Table 2 suggests that although there is a significant variation among districts within each division, the districts' share of admin officials within a division are conformable with the districts' share of populations within the division, in general. However, in Barisal and Chattogram Division some disparity between the two are noticeable. The share of Bhola district in BCS officials is just 9.0%, whereas 21.5% of Barishal division's population belong to this district. In the case of Barishal, Cumilla and Khulna districts, the share of officials is higher than the share of

population. In contrast, Dhaka's share of admin officials is significantly lower than its share of population.

A key question that deserves a thorough investigation is to what extent the share of districts in admin officials represent regional diversity at district level. How the socio-economic profiles of the districts are related to district level representation in admin cadre.

Variation Across Districts

Figure 2: Scatter Plot of the districts' share in admin officials, and share in population
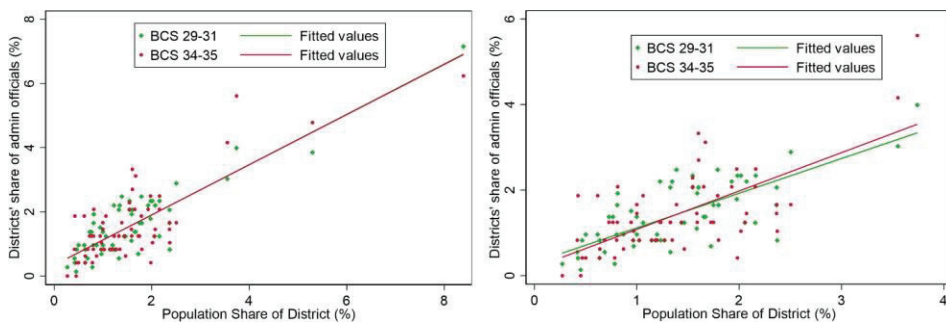

Figure 2 shows the relationship between the districts' share in population, and share in admin officials, where the former is plotted on the horizontal axis and the latter on the vertical axis. The left panel shows all 64 districts, and the right panel shows only 62 districts, excluding Dhaka and Chattogram. In both panels, the green dots represent the 29th–31st BCS batches, and the red dots show the results for the 34th–35th BCS. The graphs clearly show that there is a strong positive relationship between population share and admin officials share. In Figure 3, the relationship between the districts' share of freedom fighters and the share BCS officials is presented. Again, a clear positive relationship is reflected between these two variables. In comparison to Figure 1, the fitted lines are slightly less steep in the case of Figure 3. Another interesting similarity between Figure 2 and Figure 3 is that in both cases the fitted lines are slightly steeper for the 34th-35th BCS group compared to 29th–31st BCS group indicating a slightly stronger relationship in the former.

Figure 3: Scatter Plot of the Districts' Share of Admin Officials and Share of Population
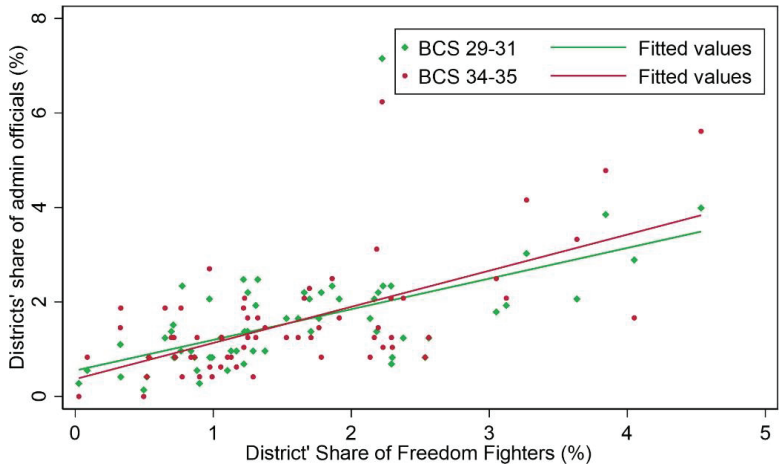

The key question that follows is whether the selection of candidates based on the population share of their corresponding districts puts the candidates from poorer districts in a disadvantageous position. Such a possibility can arise if there is a negative relationship between the districts' population share, and poverty rates. To verify this claim, the relationship between the poverty rates of districts and the population share of districts are showed in Figure 4.

Figure 4: Scatter plot of poverty rates of districts and population share of districts
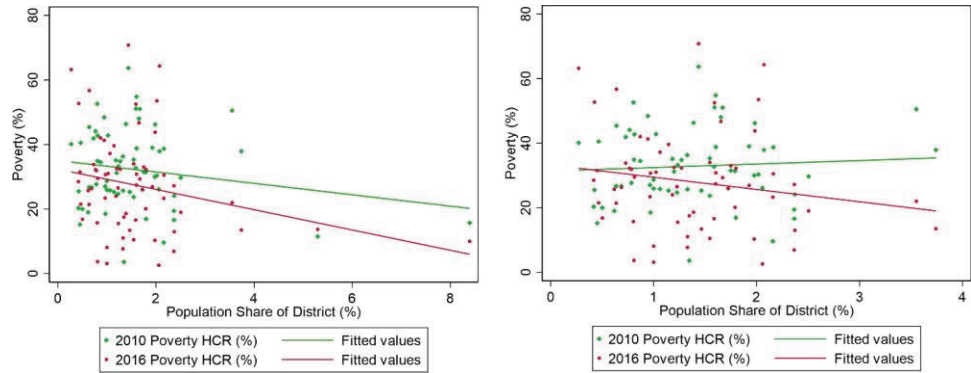
As in the case of Figure 1, two separate diagrams are showed both with and without two largest districts of the country. The left panel of Figure 4 plots the data for all 64 districts and the right panel for 62 districts only. In both panels, the green dots (lines) show the distribution of poverty rates in 2010 and red dots presents the poverty rates in 2016 against the districts share of population in 2011. On the left panel, a negative relationship between poverty rates and share of population is clearly reflected for both 2010 and 2016, mainly due to inclusion of two largest districts in terms of population, Dhaka and Chattogram. In the right panel, after excluding these two districts, two different results are observed. First one suggests that there is no clear pattern in the distribution of poverty rates of districts in 2010 with respect to the population share of districts. In contrast, the second one suggests that there is a negative relationship between the poverty rates of districts in 2016 and population share of districts in 2011. Therefore, the possibility that population share based allocation of quota had led to marginalization of poverty prone districts cannot be discarded in the case of BCS 34th-35th batches. However, as freedom fighters' quota also play an important role in selection of BCS officials, its relationship with the share of poverty rates is worth exploring. Figure 5 shows the scatter plots of the relationship between these variables with and without the two largest districts of Bangladesh in terms of population.

Figure 5: Scatter plot of poverty rates of districts and Freedom Fighters share
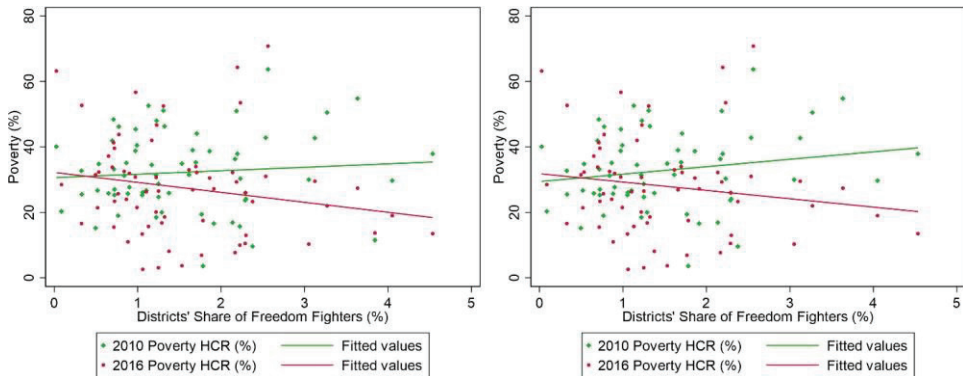
In the left panel of Figure 5, with all 64 districts a slightly positive relationship between the poverty rates in 2010 and freedom fighters' share emerges, which becomes relatively stronger in the right panel after excluding Dhaka and Chattogram districts. In contrast, in both panels the districts' share of freedom fighters appears to be negatively correlated with the poverty rates in 2016.

Figure 6: Scatter Plot of the districts' Share in Admin Officials, and Poverty Rates
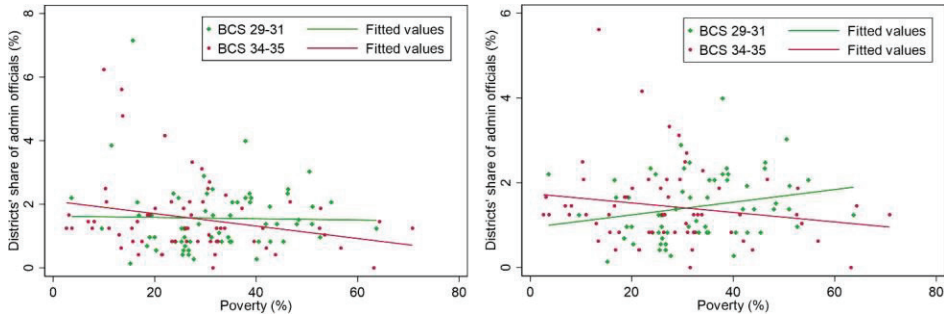

Figure 6 plots the relationship between poverty rate of the districts and the districts' share of admin officials. In the left panel, with all 64 districts, there is no clear pattern in the relationship between the poverty rates in 2010 and the districts' share in BCS 29-31. But in the right panel, after excluding Dhaka and Chattogram districts, a positive relationship is observed between these two variables. In contrast in both panels, the poverty rates in 2016 and the districts share in BCS 34th-35th batches are found to be negatively correlated. The above findings suggest that the selection of officials from the 29th to the 31st BCS through freedom fighters' quota may have slightly increased the representation of underserved areas indirectly through its positive relationship with the poverty rates of the districts in 2010. However, the results are likely to be opposite for the 34th-35th BCS batches, owing to negative relationship between these two variables. In the econometric analysis, we explore these issues in a systematic way.

Econometric Specification

The econometric analysis explores whether and to what extent the economic and educational status of the districts are reflected in the distribution of BCS admin officials after controlling for factors governing the quota system: districts' population share, freedom fighters share and ethnic population share. Therefore, the preliminary specification considers two sets of independent variables: quota system specific and socio-economic factors. Considering the availability of key independent variables, only cross-sectional specification is applicable for econometric analysis. The choice of period for the preliminary econometric specification is based on the year of availability of two key variables of interest: the population share of a district and the poverty rate of a district. The first one is calculated from the population census, and the second one is taken from the poverty maps of Bangladesh. District level poverty rates are available for 2010 and 2016 only, where the former is based on HIES 2010 and PC 2011; and the latter

on HIES 2016 and PC 2011. Taking the above issues into consideration, two periods are analyzed separately. The first period includes the officials that were recruited between 2011 and 2012, and the second period between 2016 and 2017. Based on the year of recruitment notifications, the first period combines three BCS batches (29th-31st) and the second period covers two BCS batches (34th-35th) only. The primary econometric model is as follows:

$$BCS\_share_{jj} = \alpha + \delta\delta_1 Pop\_share_{jj} + \delta\delta_2 Freedom\_share_{jj} + \delta\delta_3 Eth\_share_{jj} + \delta\delta_4 Poverty_{jj} + \delta\delta_5 Edu_{jj} + \varepsilon\varepsilon_{jj},$$

where BCS_share_{jj} is the share of officials of district j in a particular period (2011-12 or 2016-17). Pop_share_{jj} is the districts' share of population in 2011. The coefficient $\delta\delta_1$ is expected to be positive indicating that higher the share of population of a district the higher is the share of admin officials of the district. $Freedom\_share_{jj}$ denotes the percentage of freedom fighters that belong to district j and Eth_share_{jj} represents the percentage of ethnic population in district j. The corresponding coefficients for both the variables, $\delta\delta_2$ and $\delta\delta_3$ are also expected be positively signed as these variables are taken into consideration for selection of officials. $Poverty_{jj}$ is the poverty head count ratio of district j in 2010 for period one or in 2016 in the case of period two. The sign of $\delta\delta_4$ can be either positive or negative. The positive sign of $\delta\delta_4$ indicates that the districts with higher poverty rates have higher representativeness in distribution of admin officials, while the negative sign will indicate the opposite. Edu_{jj} is the percentage of adult who completed primary education in district j in 2011. The main advantage of combining more than one year in a particular period is to reduce short-term variation in the districts' share and to get an overall measure of the districts' representativeness. However, unobserved regional factors may influence the coefficients of interest. To control for these unobserved area specific factors, the equation is rewritten by including a set of division dummies in specification (2).

$$BCSshare_{jj} = \alpha + \delta\delta_1 Pop_{share_{jj}} + \delta\delta_2 Freedom_{share_{jj}} + \delta\delta_3 Eth_{share_{jj}} + \delta\delta_4 Poverty_{jj} + \delta\delta_5 Edu_{jj} + \sum\theta\theta_k Division_k + \varepsilon\varepsilon_{jj}, \qquad (2)$$

Regression Results

This section explores how the quota system-based factors, and the socio-economic factors affect the share of districts in BCS admin officials in two different periods: the first includes the officials of 29th to 31st BCS batches and the second includes the officials of 34th to 35th BCS. As discussed earlier, two different periods are chosen according to availability of district level poverty rates. Table 3 shows the OLS regression results of the determinants of the districts' share of officials in the 29th-31st BCS batches.

Column (1) in Table 3 shows the results based on specification (1). Out of 3 three quota specific variables, the districts' share of population and share of freedom fighters appear with a positive sign and statistically significant at 1% level. The coefficient on Pop_share_{jj} is 0.519 with a standard error of 0.09, which is quite large in terms of magnitude. The estimated coefficient indicates that a 1% in the share of population of a district leads to a 0.5% increase in the share of admin officials of the district, on average, controlling for other determinants of admin officials. The estimated coefficient (s.e.) on $Freedom\_share_{jj}$ is 0.226 (0.079), which is less than half of the coefficient on Pop_share_{jj}. The difference between the two coefficients in terms of magnitude is expected given the nature of quota distribution procedure. On the other hand, the coefficient on the share of ethnic population is close to zero and is statistically insignificant. The model includes two important socio-economic factors: poverty HCR (%) and university completion rates (Edu_{jj}) of the districts. The coefficient on poverty rates of the districts measured by HCR (2010) is 0.010 which is very small in magnitude compared to the coefficients on the university completion rates of the districts and statistically insignificant.[4] In the case of latter, the estimated coefficient (s.e.) is 0.183 (0.056), which is slightly less than the coefficient on $Freedom\_share_{jj}$, but still quite large.

As the results in column (1) are based on all 64 districts, a concern remains whether the results are influenced by the districts that have significantly larger share of population. To address this concern, in column (2), two dummy variables are added for two largest districts: Dhaka and Chattogram. After including these two dummy variables, the coefficient on Pop_share_{jj} increases from 0.519 to 0.536 in column (2) and remain statistically significant at 1% level. However, no major change is observed for other coefficients.

Column (3) excludes Dhaka and Chattogram division and obtain the same results as in column (2). Column (4) checks the sensitivity of the results further by excluding four largest districts in terms of population share. In this case, the coefficient on Pop_share_{jj} decreases to 0.506 and the other coefficients remain close to that of column (1). In Column (5), a set of division dummies are included, while Dhaka division as the comparison category. Inclusion of division dummies brings some changes in the estimated coefficients. First, the estimated coefficient on population share is the highest in Column (5). Second, the coefficient on ethnic population share appears to be positive and statistically significant. Third, the coefficient on university completion rate becomes smaller and turns statistically insignificant but remains positive.

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[4] In alternative regressions (results are not reported here), extreme poverty headcount ratio and percentage of population in bottom 40% are also used to check the robustness of the results.

Table 3: Determinants of the Districts' Share of BCS admin officials (29th-31st BCS)

	(1)	(2)	(3)	(4)	(5)
Share of Population (Pop_share_{jj})	0.519***	0.536***	0.536***	0.506***	0.677***
	(0.090)	(0.114)	(0.113)	(0.136)	(0.152)
Share of Freedom Fighters ($Freedom\_share_{jj}$)	0.226***	0.242***	0.242***	0.222**	0.190*
	(0.079)	(0.086)	(0.085)	(0.087)	(0.100)
Share of Ethnic community	0.00	0.002	0.002	0.00	0.018**
	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)
Poverty HCR (%) 2010	0.010	0.009	0.009	0.009	0.007
	(0.006)	(0.007)	(0.006)	(0.007)	(0.006)
Uni. Completion (% of Adult)	0.183***	0.177**	0.177**	0.182**	0.091
	(0.056)	(0.075)	(0.074)	(0.074)	(0.099)
Dhaka District Dummy		0.082			-0.224
		(1.036)			(1.429)
Chattogram District Dummy		-0.638			-0.608
		(0.457)			(0.558)
Divisional Dummies					
Barisal					-0.153
					(0.197)
Chattogram					-0.458**
					(0.193)
Khulna					0.001
					(0.287)
Mymensingh					0.025
					(0.263)
Rajshahi					-0.261
					(0.231)
Rangpur					-0.373*
					(0.204)

Sylhet					-0.987***
					(0.336)
Constant	-0.427*	-0.417	-0.417	-0.365	-0.044
	(0.251)	(0.280)	(0.276)	(0.291)	(0.316)
R-squared	0.804	0.802	0.612	0.491	0.836
N	64	64	62	60	64

Note: The dependent variable in all columns is $BCSshare_{jj}$. Robust standard error in parentheses. * p<0.10, ** p<0.05, *** p<.01

Table 4: Determinants of the Districts' Share of BCS admin officials (34th-35th BCS)

	(1)	(2)	(3)	(4)	(5)
Share of Population	0.530***	0.536***	0.536***	0.263	0.567***
(Pop_share_{jj})	(0.142)	(0.192)	(0.189)	(0.177)	(0.190)
Share of Freedom Fighters	0.397***	0.392**	0.392**	0.318**	0.348**
($Freedom\_share_{jj}$)	(0.145)	(0.156)	(0.153)	(0.140)	(0.139)
Share of Ethnic community	0.029	0.029	0.029	0.017	0.012
	(0.024)	(0.025)	(0.024)	(0.022)	(0.028)
Poverty HCR (%) 2016	-0.005	-0.004	-0.004	-0.003	-0.006
	(0.005)	(0.005)	(0.005)	(0.004)	(0.006)
University Completion Rate	0.074	0.08	0.08	0.129	0.116
(% of Adult)	(0.098)	(0.131)	(0.129)	(0.125)	(0.169)
Dummy Dhaka District		-0.147			-0.543
		(1.747)			(1.957)
Dummy for Chattogram District		-0.002			-0.657
		(0.805)			(0.798)
Divisional Dummies					
Barisal					0.692*
					(0.347)
Chattogram					0.705**

					(0.342)
Khulna					0.065
					(0.272)
Mymensingh					0.734**
					(0.318)
Rajshahi					-0.079
					(0.318)
Rangpur					-0.029
					(0.329)
Sylhet					-0.426
					(0.395)
Constant	-0.013	-0.032	-0.032	0.248	-0.225
	(0.245)	(0.397)	(0.391)	(0.361)	(0.440)
R-squared	0.682	0.67	0.488	0.255	0.739
N	64	64	62	60	64

Note: The dependent variable in all columns is $BCSshare_{jj}$. Robust standard error in parentheses. * p<0.10, ** p<0.05, *** p<.01

The main findings from Table 3 are that the coefficient on poverty rate is positive but very small in magnitude and statistically insignificant in all specifications, whereas the two main quota governing variables remain positive and statistically significant in all regressions. Given that the districts' share of freedom fighters is positively correlated with the poverty rates of the districts in 2010, it can be argued that the employment of officials through freedom fighters' quota indirectly contributed to a slight increase the representation of officials from underserved areas in the 29th-31st batches. Although the coefficient on ethnic population share is very small in column (5), the selection of officials through ethnic quota is also likely to increase representativeness from poor areas of the country.

Now the main question of interest is whether the contribution of quota system remained the same for 34th-35th BCS batches. Table 4 presents the OLS regression results for the 34th-35th BCS batches. The coefficient on Pop_share_{jj} in columns (1), (2) and (3) are close their corresponding columns in Table (3). But surprisingly, in column (4), the coefficient is 0.263, which is almost half of the coefficient in column (3). In all columns, the coefficient on $Freedom\_share_{jj}$ is significantly larger than their corresponding coefficients in Table (3). The magnitude of coefficient is also consistent across all columns and are statistically significant at 5% level. These findings suggest that the freedom fighters' quota played a significant role in the selection of officials during the 34th-35th BCS

examinations. The coefficient on the districts' share of ethnic minorities appears to be positive but statistically insignificant across all specifications.

However, the results are surprisingly different in terms of socio-economic characteristics of the districts. The coefficient on Poverty HCR (%) 2016, is negative across all columns but remain statistically insignificant. In the case of university completion rates of the districts, coefficients in columns (1)-(4) remain positive but their magnitude become significantly smaller than their corresponding estimates in Table (3). In all columns, the estimates are statistically insignificant. Therefore, for 34th-35th BCS batches, the districts' share of freedom fighters played the dominant role in the selection of officials. As both variables are negatively correlated with the HCR in 2016, the districts with higher poverty are likely to remain underrepresented in the 34th-35th BCS batches.

Therefore, two different scenarios emerge for two different groups of BCS batches. In the first group, comprising 29th-31st BCS batches, the coefficient on poverty appears to be positive but statistically insignificant. As the districts' share of freedom fighters has significant impact on the districts' share of officials and the former is positively correlated with the poverty rates of the districts measured in 2010, it is possible that the freedom fighters' quota indirectly contributed to increase the representation of underserved regions. A different scenario emerged in the case of 34th-35th BCS batches. In contrast to 29th-31st BCS batches, the coefficient on poverty rates in 2016 appeared to be negative but remains statistically insignificant. Here, the positive relationship between the share of freedom fighters and share of officials becomes stronger. As the poverty rates of the districts in 2016 are negatively correlated both with the districts' share of freedom fighters and share of population, for the 34th-35th batches, it is possible that the quota-based recruitment policy indirectly contributed in marginal reduction of the representation of the areas that were relatively poorer in 2016.

Conclusion

The regional diversity, if ensures the representation of different socio-economic classes, ethnic and religious communities and gender, in civil service, may foster more equitable distribution of public resources and an increase in innovative service delivery. Regional representativeness depends on regional quota and merits of the candidates from each region. While 55% of the posts were reserved for quota-based recruitment, the government of Bangladesh relied on the districts' share of population as a tool to ensure regional variation in the civil service. There is no systematic research in the existing literature exploring the effects of different types of quotas on the representativeness of bureaucracy in Bangladesh. In particular, there is no empirical study that explores whether recruitment under the

quota ensured representation of the marginalized groups in the bureaucracy. In this study, we attempt to address this gap in the literature and explore to what extent the population share based quota system contributes to improving the representation of underserved regions of the country.

The study mainly focuses on the administration cadre officials' who were recruited from the 20th to the 35th BCS examinations. Using a database of training participants at the BCS Administration Academy (BCSAA), the districts' share in the distribution of administration cadre has been constructed. To analyze the determinants of the regional representativeness, two types of independent variables are considered in the study: quota system specific variables and socio-economic variables.

Based on the availability of data on poverty rates of the districts, the BCS batches have been divided into two main groups for empirical analysis. It is found that the districts' share of population and share of freedom fighters play a major role in determining the regional representativeness in the BCS administration cadre. Among the socio-economic factors, university completion rates of the districts are found to be positively correlated with the districts' share of officials only, while the sign of the coefficient on the poverty rates of the districts changes from positive to negative.

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