Citizenship and Service Delivery: Bangalore Case Study

Do higher levels of citizenship result in higher levels of service provision? This paper applies a theoretical framework for urban service delivery in developing democracies. Using two sets of household data collected in Bangalore, India in 2007 and 2010, we assess three dimensions of citizenship, including variables for (1) electoral knowledge and participation, (2) civic knowledge and (3) social exclusion and inequality. We construct a citizenship index using these dimensions as the theoretical framework. We then assess (1) what kinds of people have what kinds of citizenship; and (2) how does citizenship correlate with the provision of basic municipal services—water, electricity, sanitation, and public amenities. We test the hypothesis that: *Higher levels of citizenship result in higher levels of service provision*. Findings suggest that one's level of citizenship is positively and significantly correlated with the provision of services he/she received from the Bruhat Bengaluru Mahanagara Palike (BBMP) *ceteris paribus*. We discuss these findings and potential policy implications of the research.

Mary E. Breeding, World Bank
mbreeding@worldbank.org

and

Siddharth Swaminathan, Institute for Social and Economic Change
siddharth@isec.ac.in

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Introduction

Do higher levels of citizenship result in higher levels of service provision? This paper applies a theoretical framework for urban service delivery in developing democracies. Using data collected from a total of 5,124 households in Bangalore, India in 2007 and 2010 household surveys, we assess three dimensions of citizenship, including variables for (1) electoral knowledge and participation, (2) civic knowledge and (3) social exclusion and inequality. We construct a citizenship index (CI) using these dimensions as the theoretical framework. We then assess (1) what kinds of people have what kinds of citizenship; and (2) how does citizenship correlate with the provision of basic municipal services—water, electricity, sanitation, and public amenities. We test the hypothesis that: Higher levels of citizenship result in higher levels of service provision. Findings suggest that one's level of citizenship is positively and significantly correlated with the provision of services he/she received from the Bruhat Bengaluru Mahanagara Palike (BBMP) *ceteris paribus*. We discuss these findings and potential policy implications of the research.

Methodology

Theoretical discussions cast citizenship as a multidimensional concept. Building upon a body of research on citizenship, we seek to develop a better understanding of citizenship in Indian municipalities. We begin with the basic concept of citizenship developed by T.H. Marshall's (1950) book *Citizenship and Social Class*. Marshall divided the concept of citizenship into three elements: political, civil, and social. The political component constitutes the right to participate in elections and to stand for office. Marshall's civil component is comprised of fundamental civil rights and liberties such as freedom of speech and religion, the right to property, and justice, and the third element, the social element, included the right to economic and social welfare.

Consistent with this theoretical understanding of citizenship, the operational definition of the CI is built on two key underlying dimensions of citizenship: (i) electoral knowledge and participation (E) and (ii) civic knowledge and participation (C). CI is computed as:

$$CI = \text{Electoral (E)} + \text{Civic (C)} \qquad (1)$$

The electoral dimension of citizenship is reflected in an individual's electoral knowledge (general knowledge regarding the political system) and electoral participation (voting and participation in election related activities such as campaigns). Similarly, the civic dimension is found in an individual's civic knowledge (awareness of which government agency is responsible for the provision of specific public services) and civic participation (participation in non-election related activities and civil society organizations). Consequently, we use (individual) responses to a range of questions addressing an individual's electoral and civic knowledge and participation in order to isolate the underlying dimensions of citizenship, i.e. E and C.

We use principal component analysis in order to construct the CI. Principal component analysis allows us to transform a set of correlated variables into a smaller set of uncorrelated variables while retaining most of the information present in the former. Specifically this technique is used to extract E and C from a correlated set of responses to questions about an individual's electoral and civic knowledge as well as her political and civic activities.

Bangalore Data

The data for this analysis are derived from two household surveys, one survey of 1224 households conducted in 2007 and one survey of 3960 households in 2010. Both surveys are representative of the demographic characteristics of the city at large, but the surveys use different overall sampling techniques. The 2007 Bangalore Household Survey used a simple random survey of 1224 respondents in twelve wards. These wards were deliberately selected and have characteristics largely representative of Bangalore households. The data were intentionally

collected to explore the nature of voter-party linkages and public goods provision in Bangalore.[1] The 2010 Janaagraha Citizenship survey uses a random sample of 40 households in each of the 99 wards covered.

The data pose one limitation for comparison. Since the collection of the 2007 data there has been delineation and redistricting of wards in the BBMP. The BBMP has increased from 100 wards to 198 wards in 2010. While the data are representative at the city level, the delineation makes it difficult to compare households at the ward level. We therefore proceed to compare individual CI scores in the 2007 data with the 2010 data for the city of Bangalore.

As noted above, we use Principal Component Analysis to derive the CI. The citizenship index is comprised of seven total components—four electoral knowledge and participation components, and three civic knowledge and participation components. These are presented in Table 1, and variables are further defined in Appendix A.

Table 1 here

In applying the electoral knowledge and participation dimension to existing data, we obtained three components for analysis in the 2007 household data and four components for the 2010 data. Principal component analysis was used to determine the fit of the variables. The data formed two types of electoral knowledge variables—one related to national level politics and one regarding respondent's ability to identify his/her elected officials. The remaining two component variables relate to electoral participation. One is a component of voting—whether or not the respondent participates in local, state and Lok Sabha elections; the second is a component to assess participation in political rallies and events.

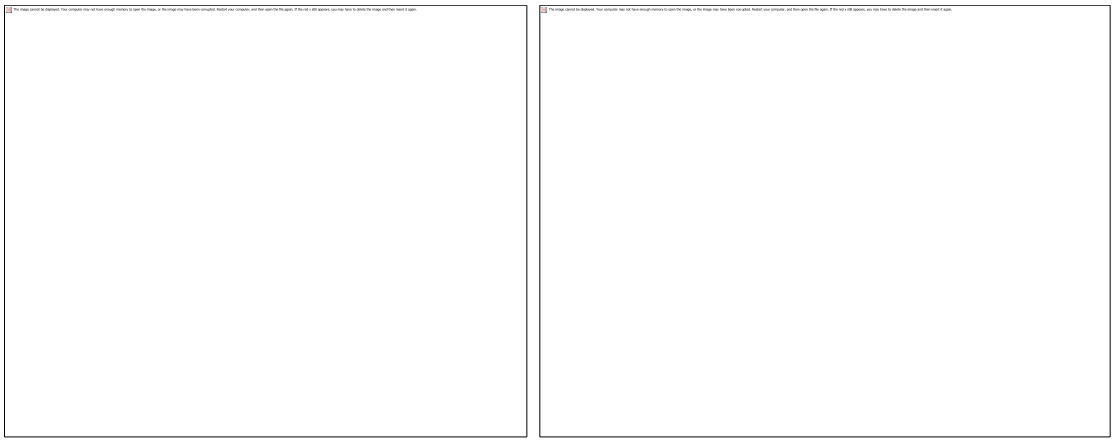
[1] The survey instruments, multi-lingual questionnaires in English and Kannada (with Tamil and Urdu supplementary questionnaires), specifically include questions about preferences for different policy issues, vote bank benefits, political affiliation, participation in politics, as well as a number of commonly asked demographic questions. This includes voting behaviors in the previous rounds of local, state and national elections.

Similarly, principal component analysis resulted in different component variables for civic knowledge and participation. These include a component variable that captures information about citizens' knowledge of governance and corruption characteristics—notably the Right to Information Act in the 2010 data. The second component assesses civic participation in civic organizations, NGOs and volunteer activities. The 2007 data include a component variable for participation in different kinds of civic activism such as signing a petition or joining a boycott. The citizenship index is the summation of these electoral and civic component variables.

The Citizenship Index

Figure 1 highlights the distribution of the CI in both the 2007 and 2010 data sets. The 2007 and 2010 citzenship index follow a similar pattern.

Figure 1. Bangalore Citizenship Indices 2007 and 2010

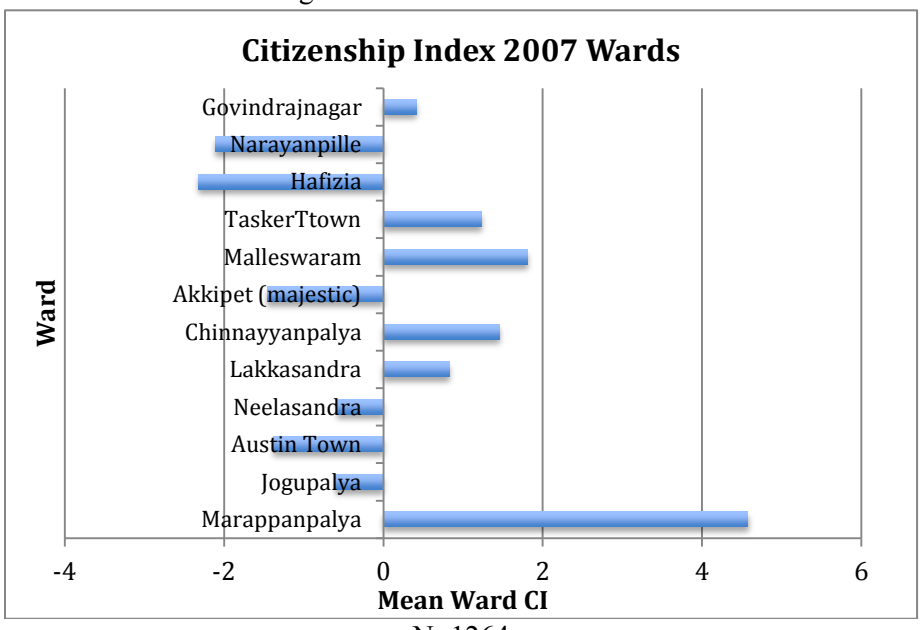


The 2007 data ranges from -7.13 to 27.97, and the 2010 data ranges from -7.43 to 17.01. The mean of both datasets is zero. Both datasets are slightly skewed at the lefthand side of the distribution. This result occurs when we apply the theoretical framework to combine the electoral knowledge and participation components with the civil knowledge and participation components. In both sets of data electoral knowledge and particiaption components present a normal positive distribution. In particular electoral participation is high. Approximately 90% of respondents vote in local, state and national elections.

Civic knowledge and participation scores, however, are negative and skewed at the lefthand side of the distribution. This is the case because most respondents do not participate in civic organizations—at least as defined by the Western notions of civic engagement—e.g. in NGOs and organizations defined by individuals such as Putnam (1995). Looking beyond Putnam, more participants report engaging in volunteerism. For instance, in the 2007 household survey 31% of households report that they regularly engage in volunteer activities. Even so, the civic participation and knowledge elements reported in both Bangalore surveys are low reletive to the electoral participation and knowledge reported. Therefore, when we combine the civic and electoral components, we get Figure A, CI indices, a slightly skewed CI index with a mean of zero.

It is also important to highlight that there is substantial ward-level variation. Figure 2, for instance, highlights the varition found in the 2007 data collected in twleve wards.

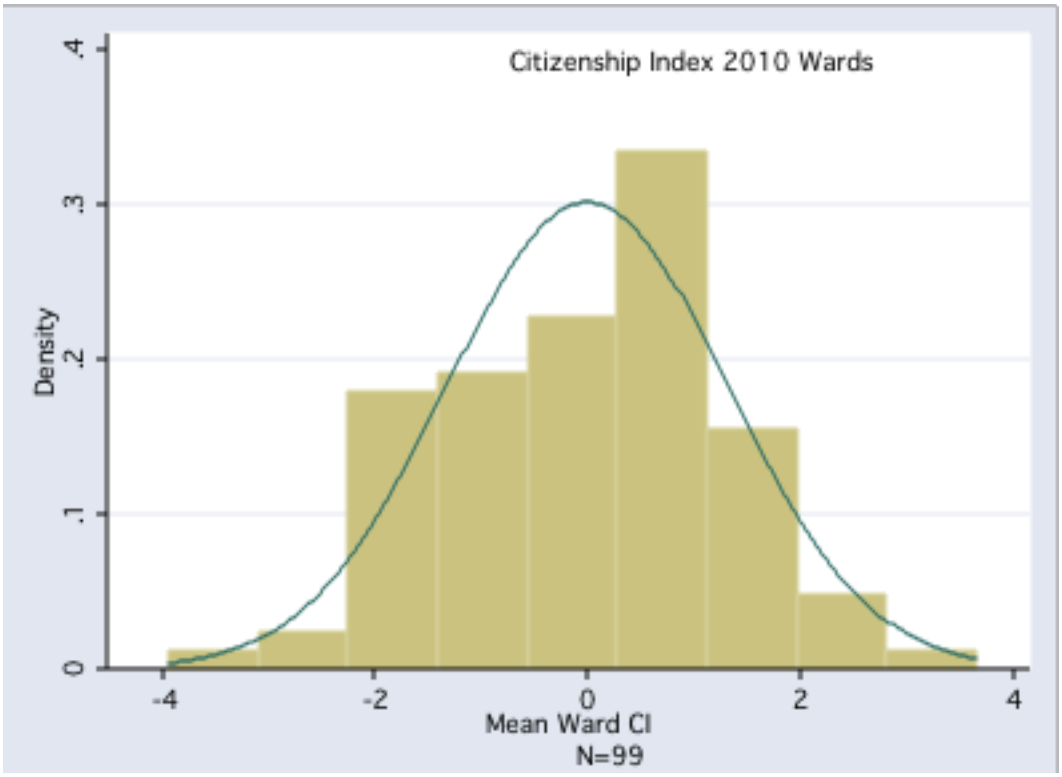
Figure 2. Ward-Level Variation



N=1264

The mean CI by ward varies from -2.38 to 4.58 n the 2007 data. The 2010 data produce similar patterns with variation ranging from -3.35 to 3.65. Figure 3 presents ward level distribution of CI.

Figure 3. Ward-Level Variation



The ward level variation raises questions about the nature of citizenship in Indian municipalities. What explains this ward-level variation? Further, does this ward variation result in different levels of public service provision across wards? We explore these questions below—starting with individual level data.

What kinds of people have what kinds of CI?

What kinds of citizens have a high citizenship score, and what kinds of citizens have low citizenship scores? What kinds of individuals do we expect to be knowledgeable about and to participate in electoral and civic institutions? A myriad of research on Indian elections and civil society makes assertions about the kinds of people who are engaged in these activities, but to date (perhaps with the exception of voting) there is little data to empirically assess who participates. There is even less of an understanding of such activities in urban India.

We estimate the following OLS regression to better understand what kinds of people have what kinds of citizenship scores in Bangalore:

(2)

In equation 2, an individual respondent's CI score is estimated as a function of the respondent's demographic characteristics (*Dem)*; caste and religious identity, and if it is shared with his/her Ward Corporator (*Identity)*; ward level characteristics (*Ward)*; and the respondent's income (*Income); and* μ_i is the error term. Some ward-level characteristics vary between the 2007 and 2010 data. For instance, income is only reported in the 2007 data. Tables 2 and 3 present estimates of equation 2 in both data sets. Descriptive statistics are available in Tables 6 and 7.

Table 2 presents factors associated respondents' individual CI scores in 2007.

Table 2 here

The data suggest that a respondent's CI score is strongly associated with identity variables. For example, Scheduled Castes and Scheduled Tribe members have higher CI scores relative to other caste groups ($p < 0.05$). Also, religious minorities score 1.12 points lower than Hindus, holding other variables constant ($p < 0.01$). Overall, men have higher CI scores than women, and a one-year increase in age is associated with a 0.05 increase in the CI score ($p<0.05$).

Identity is equally important in assessing ward-level characteristics. When a respondent shares the identity of his/her Ward Corporator there is variation in the CI score. For instance, when a female respondent lives in a ward with a female reserved seat, her CI score is 0.68 points higher than other respondents ($p < 0.05$). This suggests that the female reservation has a positive and significant relationship on women's CI scores. Outcomes for SC/ST reserved seats have a consistently negative sign (though not significant). We also include a variable to assess what happens to the CI score when Muslim lives in a ward with an elected Muslim leader (without a reservation). Here the outcome is significant and negative. When a Muslim respondent lives in a ward with an elected Muslim corporator his CI score falls by 3.1 points relative to other

respondents.

Respondents who reported living in wards controlled by the Congress party relative to the BJP and JDS (Ward corporator was a Congress Party member) have higher CI scores. At the time of the 2007 survey, the municipality was largely Congress controlled, and this may in part account for the variation. Interestingly, demographic characteristics such as education and income have no association with the CI Score.

Similarly, in equation 3 an individual respondent's CI is estimated as a function of caste, religion, age, education, gender, and the amount of time the respondent has lived in Bangalore, and μ, the error term:

$$CI_i = \beta_0 + \beta_1 Caste_i + \beta_2 Religion_i + \beta_3 Age_i + \beta_4 Education_i + \beta_5 Gender_i + \beta_6 Time_i + \mu_i \qquad (3)$$

Table 3 Here

Results from an OLS estimation of equation 3 using 2010 household data (in Table 3) shows that all of the included variables have a significant statistical effect on the CI. We find that religious minorities (including Muslims, Christians, Jains, and others) record lower levels of citizenship relative to Hindus (the reference category). Similarly caste differences in the CI exist as well. Relative to the General caste category, Scheduled Castes, Scheduled Tribes, and Other Backward Castes indicate lower levels of citizenship. The amount of time an individual has spent in Bangalore has a positive effect on the CI. An individual who has lived his/her entire life in Bangalore scores highest on the CI index. The values of citizenship get progressively smaller as the time lived in Bangalore decreases. Age has a positive effect on the CI, and women tend to exhibit lower levels of citizenship relative to me. Finally, literate respondents indicate higher levels of citizenship relative to illiterate respondents. In comparison to the results from Table 2, the key difference lies in the effect of caste on citizenship. While the results from 2007 data shows that SC/ST status reflects a higher level of citizenship, the results from Table 3 indicate the opposite. However, the signs on other comparable variables (such as gender, age, and religion)

are consistent.[2]

Do higher levels of citizenship result in higher levels of service provision in Bangalore?

We specify the following hypotheses in order to test the relationship between citizenship and service delivery provision across wards in Bangalore:

H1: Higher levels citizenship will likely result in higher levels of service provision.

Given that higher levels of citizenship reflect greater citizen involvement in political and civic affairs, we expect wards with a higher CI scores to exhibit higher levels of service delivery. A possible explanation for the positive effect of CI is that citizens with higher levels of citizenship are likely to demand the promised services from governments and find ways to express dissatisfaction in case their demands for services are not met, thereby putting pressure on local governments to respond to their needs. We estimate two models for service provision, one at the household level and one at the ward level.

Household Level Service Provision, 2007 data

The 2007 household questionnaire asks respondents a series of questions about BBMP services they receive, including: a water connection, electricity, Below Poverty Line cards (BPL) and a gas connection. The water, electricity, and gas services are all locally provides services, while the BPL is only distributed locally. The dependent variable for this analysis is whether or not households report receiving these services. In order to test the above hypothesis, we estimate the following model:

$$\Pr(Y_i = 1) = F(\beta_0 + \beta_1 CI_i + \beta_2 Dem_i + \beta_3 Ward_i + \beta_4 Income_i) \qquad (4)$$

Where the probability of a respondent receiving service Y is a function of the CI, a respondent's demographic characteristics (Dem), ward level characteristics ($Ward$), and the respondent's income ($Income$). Results are reported in Table 4.

Table 4 here

[2] This might be a result of ward variables—either due to the wards selected in the 2007 sample, or of the inability to control for ward size in the 2010 data since we are still awaiting the most recent census data.

Table 4 presents marginal effects of a logit regression with robust standard errors. The results highlight that there is positive and significant relationship between an individual's CI score and service delivery. For instance, for every one-point increase in a respondent's CI score, the likelihood that he/she has a gas connection increases by 2 percent ($p < 0.01$). This is similar for provision of water, electricity and the BPL card. One initial concern is that income would be collinear with a citizen's CI score, but it, surprisingly, is not. Even when controlling for income, the CI score remains a significant and important element for determining service provision.

Three other variables are significant in assessing service delivery: SC/ST status, income, and ward size. SC/ST members are slightly less likely to have electricity and gas connections. Income is equally significant, except in the instance of provision for the BPL card. As an individual's income increases, he/she is more likely to have BBMP provided services. Lastly, ward size is negatively associated with BBMP service delivery. As the size of the ward increases, people are less likely to report service delivery. These variables comport with many of our stereotypes and expectations for who receives services.

Ward Level Service Provision, 2010 data

In order to test the relationship between citizenship and public service delivery, we use the Ward Infrastructure and Service Assessment (WISA) data generated by Janaagraha for the 99 wards (comparable to the 2010 Janaagraha survey on citizenship). Ward level service delivery is specified as a function of ward level citizenship, ward level socio-demographic characteristics, ward level political characteristics, and the geographic location of the ward. OLS estimates of equation 5 given below are presented in Table 5:

$$WI = \alpha + \beta_1 CI + \beta_2 W + \beta_3 SC + \beta_4 ST + \beta_5 N + \beta_6 S + \beta_7 E + \beta_8 W + \beta_9 BJP + \beta_{10} INC + \beta_{11} JD(S) + \varepsilon \quad (5)$$

The results indicate that CI exerts a positive effect on WI and the effect is statistically significant (0.01 error level, two tailed). A one-unit increase in the citizenship index results in a 0.22 unit increase in the level of ward infrastructure. Wards reserved for women indicate a lower

level of infrastructure relative to ward that are not reserved for women. This effect is only weakly significant (0.1 error level, one tailed). Infrastructure in SC and ST reserved wards are not statistically different from the wards not reserved for SC and ST respectively. The coefficient on ST however is negative and just misses statistical significance. Ward level political characteristics i.e whether ward was won by BJP, INC or JD(S) in the 2010 BBMP elections, does not have a statistically significant effect on service provision.

Discussion

This paper has sought to better understand the relationship between citizenship and service delivery. In doing so, we have applied a model of citizenship to data collected in Bangalore to assess whether or not citizenship is associated with service provision. We sought to develop an index using the concept of citizenship developed by T.H. Marshall's (1950) book *Citizenship and Social Class*. Marshall's theory outlined three components to citizenship: political, civil, and social. We developed two dimensions, one related to electoral knowledge and participation and a second related to civic knowledge and participation. Findings suggest that one's level of citizenship is positively and significantly correlated with the provision of services he/she received from the Bruhat Bengaluru Mahanagara Palike (BBMP) *ceteris paribus*.

Our preliminary analysis suggests that wards populated by citizens with greater levels of political and civic engagement exhibit higher levels of infrastructure. Further tests are needed to assess the strength of this relationship especially across the different components of infrastructure and service delivery. Yet, these results have significant implications. Generating higher levels of citizen engagement is a key tool toward improving governance in urban centers.

Note: Two thoughts/Limitations to consider moving forward:

Reconsider the definition of citizenship used to create the index. The high level of electoral knowledge and participation combined with the low level of civic knowledge and participation cancel one another out in the creation of the CI. This raises questions about the fit of the theoretical framework to the political economy context—Bangalore. Are we measuring the right components, and do we have the right variables to capture civic knowledge and engagment? We discuss this further in the conclusion, and present some possible alternative suggestions for the way forward.

Do not look at social exclusion as part of the index but use it as a control variable. Is feeling socially excluded a part of your citizenship, or does it effect how you experience citizenship? This analysis suggests the latter—One's identity, and his perception of inclusion/exclusion—is likely to influence his level of citizenship. Social inclusion/exclusion perceptions directly affect why people participate and possibly what they know. Hence, adding it as a component of the index will create a theoretically inconsistent index with construct validity problems. Marshall's (1950) theoretical framework outlines an underlying theory about citizenship, but he did not conceive of it as an equally component index. Nor was it conceived in the context of a multiethnic society such as India, where identity is so pertinent in explaining why people participate.

Works-Cited

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Appendix A. 2007 and 2010 Citizenship Index Variables

Electoral Knowledge and Participation

Head of Indian Government (E_HOGI)

2010 data: Who is the head of the Indian Government? (PM = 1, Other = 0)
2007 data: Please tell me the name of the Prime Minister of India (PS3c4)

Party/Coalition of Parties Ruling at the Center (E_NATC)

2010 data: Which party/coalition of parties is currently ruling at the centre? (Congress = 1, Other = 0)
2007 data: NA

Identify MP (E_MP)

2010 data: NA
2007 data: Please tell me the name of your MP (Correct name = 1, Incorrect ==0)

Head of Government of Karnataka (E_HGOK)

2010 data: Who is the head of the Government of Karnataka (CM = 1, Other = 0)
2007 data: NA

Party/Coalition of parties ruling at the state level: (E_STC)

2010 data: Which party/coalition of parties is currently ruling at the state level? (BJP = 1, Other = 0)
2007 data: NA

Identify Mayor (E_MAYR)

2010 data: (1 = correctly identified, 0 = Not)—Check coding—q7a and q7ascore do not match
2007 data: PS3ca (1 = correctly identified, 0 = Not)

Identify Corporator (E_CORP)

2010 data: (1 = correctly identified, 0 = Not)—Check coding
2007 data: PS3cab (1 = correctly identified, 0 = Not)

Identify MLA (E_MLA)

2010 data: (1 = correctly identified, 0 = Not)—Check coding
2007 data: PS3cab (1 = correctly identified, 0 = Not)

Currently registered to vote in Bangalore (E_VREG)

2010 data: Q13 (1 = registered in Bangalore, 0 = Not)
2007 data: PS1a3 (1 = registered in Bangalore, 0 = Not)

Voted (E_VOTE)

2010 data: Q13 (1 = voted in BLR, 0 = Not)
2007 data: PS1d (1 = voted in BLR in last election, 0 = Not)

Voted BBMP Election (E_VBBMP)

2010 data: Q15 (1 = Regular voter in BBMP Election, 0 = Not)
2007 data: PS1f1 (1 = Regular voter in BBMP Election, 0 = Not)

Voted Karnataka State Election (E_VVSOU)

2010 data: Q13 (1 = voted in state election, 0 = Not)
2007 data: PS1d2 (1 = voted in state election, 0 = Not)

Voted Lok Sabha Election (E_VLOKS)

2010 data: Q13 (1 = voted in Lok Sabha election, 0 = Not)
2007 data: PS1dc3(1 = voted in Lok Sabha election, 0 = Not)

Participated in election campaigns (E_CAMP)

2010 data: Q17a (1 = Participated in election campaigns, 0 = Not)
2007 data: NA

Participated in procession or public rallies (E_PRAL)

2010 data: Q17b (1 = Participated in procession or public rallies, 0 = Not)
2007 data: PS1e. (1 = Participated in procession or public rallies, 0 = Not) (corporate, state, or local)

Distributed election leaflets and or put up posters (E_POST)

2010 data: Q13 (1 = voted in Lok Sabha election, 0 = Not)
2007 data: NA

Civic Knowledge and Awareness

Knowledge of public departments/agencies (C_WATR, C_ROAD, C_PHLT, C_SANI, C_TRAN, C_PARK, C_POWR, C_TRAF)

2010 data: Q8—Water supply, roads and flyovers, public health, sanitation & public toilets, public transport, parks gardens, electricity (1 = Knows agency, 0 =Does not)
2007 data: NA

Who is responsible for providing you info on RTI? (C_RTI)

2010 data: Q10a (1 = Public Information Officer, 0 = Other)
2007 data: NA

Authority you file complaint to regarding issues of corruption in government offices in the city (C_FRTI)

2010 data: Q11 (1 = Lokayukta, 0 = Not)
2007 data: NA

Participated in public forum (C_PFOR)

2010 data: Q17d (1 = Yes, 0 = No)
2007 data: NA

Met with Corporator or MLA (C_CORP)

2010 data: Q17e (1 = Yes, 0 = No)
2007 data: NA

Signed a petition (C_PET)

2010 data: NA
2007 data: F15a (1 = Yes, 0 = No)

Joined a boycott (C_BYCOT)

2010 data: NA
2007 data: F15b (1 = Yes, 0 = No)

Joined a lawful demonstration (C_DEMO)

2010 data: NA
2007 data: F15c (1 = Yes, 0 = No)

Aware of ward committee meetings in community (C_WCOM)

2010 data: Q18 (1 = Yes, 0 = No)
2007 data: NA

Participate in citizen initiatives/NGO campaigns (C_PART)

2010 data: Q22a (1 = Yes, 0 = No)
2007 data: PS2 (1 = Yes, 0 = No)

Participate in Volunteer Activities (C_VOLR)

2010 data: Q22a (1 = Yes, 0 = No)
2007 data: F2e (1 = Yes, 0 = No)

Active member of any civil society organizations (C_MNGO)

2010 data: Q22c (1 = Yes, 0 = No)
2007 data: PS2 (1 = Yes, 0 = No)

Believes he/she has a say in reducing bribery in his/her community (C_BRIBE)

2010 data: NA
2007 data: PS4c (1 = Yes, 0 = No)

Believes he/she has a say in improving governance (C_GOV)

2010 data: NA
2007 data: PS4c (1 = Yes, 0 = No)

Table 1. Citizenship Index Components

Component	Variables	2007 Data	2010 Data
e_k_n_1	Electoral Knowledge: Head of State and Coalitions		X
e_k_l_1	Electoral Knowledge: Mayor, MLA, Ward Corporator, MP	X	X
e_v_1	Electoral Participation: Registered, Voted BBMP, State, Lok Sabha Elections	X	X
e_p_1	Electoral Participation: Attended Political Rallies	X	X
c_k_ser	Civic Knowledge Services: Water, Sanitation, Transport		X
c_k_rti	Civic Knowledge: RTI, Corruption	X	X
c_p_1	Civic Participation: NGOs, civil society organizations, volunteer	X	X
c_p_2	Civic Participation: Signed petition, joined demonstration	X	

Table 2. 2007 Factors Associated the CI

VARIABLES	(1) CI	(2) CI	(3) CI	(4) CI
SC/ST	0.744**	0.460	0.514	0.795**
	(0.355)	(0.348)	(0.366)	(0.366)
Religious Minority (relative to Hindu)	-1.121***	-1.284***	-1.289***	-1.135***
	(0.264)	(0.270)	(0.287)	(0.324)
Male	0.370	1.228***	1.594***	1.348***
	(0.268)	(0.283)	(0.323)	(0.324)
Married	0.208	0.427	0.607	0.777
	(0.590)	(0.556)	(0.585)	(0.576)
HSC Grad	0.0183	0.0724	0.0930	0.201
	(0.249)	(0.235)	(0.260)	(0.254)
Skilled Occupation	0.0671	-0.00490	-0.166	-0.0741
	(0.422)	(0.391)	(0.403)	(0.394)
Age	0.0238	0.0298*	0.0364*	0.0458**
	(0.0178)	(0.0172)	(0.0199)	(0.0193)
SC/ST shared		-1.785	-1.925	-2.010
		(1.328)	(1.255)	(1.319)
Female shared		1.331***	1.401***	0.680**
		(0.254)	(0.263)	(0.286)
Muslim shared		-3.129***	-3.012***	-3.097***
		(0.407)	(0.699)	(0.694)
Lives in BJP ward (relative to Congress ward)				-1.713***
				(0.428)
Lives in JDS Ward				-2.144***
				(0.323)
Ward size				6.83e-05*
				(3.87e-05)
R's Income			0.258**	0.140
			(0.117)	(0.120)
Constant	-0.959	-1.568*	-2.584**	-2.839***
	(0.943)	(0.916)	(1.094)	(1.094)
Observations	1,100	1,100	934	934
R-squared	0.031	0.099	0.102	0.149

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3. 2010 Factors Associated with the CI

VARIABLES	CI
Caste (relative to General)	-0.877***
	(0.099)
Religious Minority (relative to Hindu)	-0.402***
	(0.121)
Female	-1.22***
	(0.096)
Literate	2.14***
	(0.160)
Time (relative to less than entire life)	0.930***
	(0.095)
Age	0.023***
	(0.003)
Constant	-2.26***
	(0.241)
Observations	3960
R-squared	0.149
F (9, 3950)	80.34
RMSE	2.96

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4. Logit Regression: Factors Associated with Bangalore Services

VARIABLES	(1) Water	(2) Electricity	(3) BPL Card	(4) Gas Connection
Citizenship Index	0.000882**	0.00128*	0.0164***	0.0193***
	(0.000435)	(0.000721)	(0.00342)	(0.00450)
SC/ST	-0.0161	-0.0213*	-0.0141	-0.164***
	(0.0103)	(0.0129)	(0.0321)	(0.0448)
Religious Minority (Relative to Hindu)	-0.000164	0.00228	0.0251	0.0500
	(0.00565)	(0.00800)	(0.0267)	(0.0362)
Male	0.00552	0.00309	0.000145	-0.0176
	(0.00362)	(0.00539)	(0.0289)	(0.0373)
HSC Grad	-0.00137	0.000940	0.0104	0.0792**
	(0.00328)	(0.00593)	(0.0272)	(0.0351)
Skilled Occupation	0.00541	0.00608	-0.0233	-0.0149
	(0.00624)	(0.00814)	(0.0344)	(0.0447)
Age	-9.08e-05	-2.69e-05	0.00464***	0.00466**
	(0.000211)	(0.000343)	(0.00162)	(0.00211)
Ward Size	-4.92e-07	-1.02e-06	-1.80e-05***	-2.09e-05***
	(6.47e-07)	(1.02e-06)	(5.15e-06)	(6.25e-06)
R's Income	0.00836***	0.0101***	-0.00684	0.0465***
	(0.00279)	(0.00307)	(0.0105)	(0.0169)
Observations	934	934	934	934

Marginal Effects with Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: Married Variable Dropped—Predicts Water and Electricity Perfectly

Table 5. OLS Regression: Factors Associated with Bangalore Services

VARIABLES	WISA
Citizenship Index	0.220***
	(0.053)
Women	-0.35
	(0.170)
SC	-0.55
	(0.437)
ST	-0.05
	(0.01)
North	0.33
	(0.01)
East	-1.21***
	(0.212)
West	0.10
	(0.197)
South	-0.35
	(0.23)
BJP	-0.16
	(0.174)
INC	-0.27
	(0.224)
JD(S)	-0.68
	(0.364)
R-Squared	0.40
RMSE	0.72
F (11, 87)	8.23***
Observations	99

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6. 2007 Data Descriptive Statistics

Variable	Mean	St. Dev.	Min	Max
Citizenship Index	0.324	3.839	-7.133	27.970
SC/ST	0.167	0.373	0.000	1.000
Religious Minority (relative to Hindu)	0.263	0.441	0.000	1.000
Male	0.255	0.436	0.000	1.000
Married	0.931	0.253	0.000	1.000
HSC Grad	0.688	0.463	0.000	1.000
Skilled Occupation	0.903	0.297	0.000	1.000
SC/ST shared	0.005	0.073	0.000	1.000
Female shared	0.285	0.452	0.000	1.000
Muslim shared	0.048	0.214	0.000	1.000
BJP (Relative to Congress)	0.111	0.315	0.000	1.000
JDS (Relative to Congress)	0.012	0.108	0.000	1.000
Lives in BJP ward (relative to Congress ward)	0.034	0.182	0.000	1.000
Lives in JDS Ward	0.176	0.381	0.000	1.000
Ward size	8289.304	3251.787	10761	13351
R's Income	2.952	1.137	1.000	6.000

Table 7. 2010 Data Descriptive Statistics

Variable	Mean	St. Dev.	Min	Max
Citizenship Index	-2.10e-06	3.49	-7.43	17.00
Caste (relative to General)	0.406	0.491	0.000	1.000
Religious Minority (relative to Hindu)	0.189	0.392	0.000	1.000
Female	0.53	0.490	0.000	1.000
Time	0.541	0.498	0.000	1.000
Age	38.19	14.66	18.0	95.0
Literate	0.906	0.291	0.000	1.000