Online Appendix

This online appendix provides supplementary information on the empirical results presented in the article "Explaining heterogeneity in the demand for different types of public goods." Please note that references to Tables and Figures in the article are represented by roman numerals whereas references to Tables and Figures in this appendix are denoted by capitalized letters.

Contents

1 Full Tables

To conserve space, the tables presented in the article omit the set of control variables; we present the tables in full in this section.

	Should all seasons roads be provided?	Should sanitation facilities be provided?	Should police services be provided?	Should electricity be provided?
Owns motorcycle	0.088*			
	(0.010)			
Homeowner	0.184*	0.082*	0.140*	0.247*
	(0.011)	(0.011)	(0.011)	(0.012)
Road construction in last 5 years	-0.358*			
	(0.014)			
Roads tarring in last 5 years	-0.225*			
	(0.011)			
Transportation services project in last 5 years	-0.184*			
	(0.013)			
Sanitation project in last 5 years		-0.880*		
		(0.012)		
Police services improved in last 5 years			-1.039*	
			(0.012)	
Electrification project in last 5 years				-1.071*
				(0.013)
2nd Welfare Quintile	-0.154*	0.009	-0.079*	-0.165*
	(0.012)	(0.013)	(0.012)	(0.013)
3rd Welfare Quintile	-0.283*	-0.041*	-0.197*	-0.327*
	(0.013)	(0.013)	(0.013)	(0.013)
4th Welfare Quintile	-0.422*	-0.075*	-0.231*	-0.506*
	(0.014)	(0.014)	(0.014)	(0.014)
5th Welfare Quintile	-0.588*	-0.115*	-0.339*	-0.808*
	(0.015)	(0.014)	(0.014)	(0.015)
Female	-0.071*	-0.019	-0.014	-0.074*
	(0.016)	(0.016)	(0.017)	(0.017)
Age	-0.002*	-0.002*	-0.002*	-0.003*
	(0.000)	(0.000)	(0.000)	(0.000)
Married	0.037*	-0.009	0.057*	0.077*
	(0.014)	(0.014)	(0.014)	(0.015)
Urban	-0.498*	-0.149*	-0.425*	-0.752*
	(0.014)	(0.014)	(0.015)	(0.015)
District Population	-0.000*	-0.000*	-0.000	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)
District size	0.000*	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.534*	0.674*	0.992*	1.630*
	(0.067)	(0.069)	(0.068)	(0.072)
Fixed effects?	yes	yes	yes	yes
N	115106			

Table A: Multivariate probit regressions testing whether the type of asset owned affects preferences across public goods. Note that all models were estimated simultaneously. Table displays coefficients estimated with robust standard errors. * $p<0.05$. Standard errors in parentheses. Corresponds to Table 1 in the article.

	Should school facilities be provided?	Should health facilities be provided?	Should sanitation facilities be provided?
No Schooling	0.070*	0.081*	0.030*
	(0.010)	(0.011)	(0.011)
School construction in last 5 years	-0.551*		
	(0.009)		
School rehabilitation in last 5 years	-0.318*		
	(0.008)		
Health facility construction in last 5 years		-0.736*	
		(0.011)	
Health facility rehabilitation in last 5 years		-0.472*	
		(0.010)	
Sanitation project in last 5 years			-0.944*
			(0.013)
2nd Welfare Quintile	-0.104*	-0.113*	0.026*
	(0.011)	(0.012)	(0.012)
3rd Welfare Quintile	-0.254*	-0.282*	-0.010
	(0.012)	(0.013)	(0.013)
4th Welfare Quintile	-0.323*	-0.401*	-0.032*
	(0.013)	(0.014)	(0.014)
5th Welfare Quintile	-0.371*	-0.472*	-0.041*
	(0.014)	(0.015)	(0.015)
Female	-0.006	-0.052*	-0.022
	(0.016)	(0.017)	(0.017)
Age	-0.003*	-0.003*	-0.002*
	(0.000)	(0.000)	(0.000)
Married	0.052*	0.063*	-0.009
	(0.013)	(0.014)	(0.014)
Homeowner	0.100*	0.134*	0.061*
	(0.011)	(0.011)	(0.011)
Urban	-0.294*	-0.334*	-0.108*
	(0.014)	(0.015)	(0.015)
District Population	-0.000	-0.000*	-0.000*
	(0.000)	(0.000)	(0.000)
District size	0.000*	-0.000	0.000*
	(0.000)	(0.000)	(0.000)
Constant	-0.373*	0.143*	0.628*
	(0.066)	(0.071)	(0.070)
Fixed effects?	yes	yes	yes
N		115394	

Table B: Multivariate probit regressions testing whether the level of education affects preferences across public goods. Note that all models were estimated simultaneously. Table displays coefficients estimated with robust standard errors. * $p<0.05$. Standard errors in parentheses. Corresponds to Table 2 in the article.

2 Error Assumptions

2.1 Models with plain standard errors

The models presented in the article are estimated using Huber-White sandwich estimators as we do not agree with the assumption that the errors have the same variance across all observations. However, we might be mistaken. For this reason, this section presents re-estimates of all models presented in the article, using vanilla standard errors. The results are unaffected by this modification.

	Should all seasons roads be provided?	Should sanitation facilities be provided?	Should police services be provided?	Should electricity be provided?
Owns motorcycle	0.088*			
	(0.010)			
Homeowner	0.184*	0.082*	0.140*	0.247*
	(0.011)	(0.011)	(0.011)	(0.011)
Road construction in last 5 years	-0.358*			
	(0.014)			
Roads tarring in last 5 years	-0.225*			
	(0.011)			
Transportation services project in last 5 years	-0.184*			
	(0.013)			
Sanitation project in last 5 years		-0.880*		
		(0.012)		
Police services improved in last 5 years			-1.039*	
			(0.011)	
Electrification project in last 5 years				-1.071*
				(0.012)
2nd Welfare Quintile	-0.154*	0.009	-0.079*	-0.165*
	(0.012)	(0.012)	(0.012)	(0.013)
3rd Welfare Quintile	-0.283*	-0.041*	-0.197*	-0.327*
	(0.013)	(0.013)	(0.012)	(0.013)
4th Welfare Quintile	-0.422*	-0.075*	-0.231*	-0.506*
	(0.014)	(0.014)	(0.013)	(0.014)
5th Welfare Quintile	-0.588*	-0.115*	-0.339*	-0.808*
	(0.015)	(0.014)	(0.014)	(0.015)
Female	-0.071*	-0.019	-0.014	-0.074*
	(0.016)	(0.016)	(0.016)	(0.017)
Age	-0.002*	-0.002*	-0.002*	-0.003*
	(0.000)	(0.000)	(0.000)	(0.000)
Married	0.037*	-0.009	0.057*	0.077*
	(0.014)	(0.014)	(0.013)	(0.014)
Urban	-0.498*	-0.149*	-0.425*	-0.752*
	(0.014)	(0.014)	(0.014)	(0.015)
District Population	-0.000*	-0.000*	-0.000	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)
District size	0.000*	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.534*	0.674*	0.992*	1.630*
	(0.067)	(0.070)	(0.066)	(0.070)
Fixed effects?	yes	yes	yes	yes
N	115106			

Table C: Multivariate probit regressions testing whether the type of asset owned affects preferences across public goods. Note that all models were estimated simultaneously. Table displays coefficients estimated with vanilla standard errors. * $p<0.05$. Standard errors in parentheses. Corresponds to Table 1 in the article.

	Should school facilities be provided?	Should health facilities be provided?	Should sanitation facilities be provided?
No Schooling	0.070*	0.081*	0.030*
	(0.010)	(0.011)	(0.011)
School construction in last 5 years	-0.551*		
	(0.009)		
School rehabilitation in last 5 years	-0.318*		
	(0.008)		
Health facility construction in last 5 years		-0.736*	
		(0.010)	
Health facility rehabilitation in last 5 years		-0.472*	
		(0.010)	
Sanitation project in last 5 years			-0.944*
			(0.013)
2nd Welfare Quintile	-0.104*	-0.113*	0.026*
	(0.012)	(0.012)	(0.012)
3rd Welfare Quintile	-0.254*	-0.282*	-0.010
	(0.012)	(0.013)	(0.013)
4th Welfare Quintile	-0.323*	-0.401*	-0.032*
	(0.013)	(0.014)	(0.014)
5th Welfare Quintile	-0.371*	-0.472*	-0.041*
	(0.014)	(0.015)	(0.015)
Female	-0.006	-0.052*	-0.022
	(0.016)	(0.016)	(0.017)
Age	-0.003*	-0.003*	-0.002*
	(0.000)	(0.000)	(0.000)
Married	0.052*	0.063*	-0.009
	(0.013)	(0.014)	(0.014)
Homeowner	0.100*	0.134*	0.061*
	(0.011)	(0.011)	(0.011)
Urban	-0.294*	-0.334*	-0.108*
	(0.014)	(0.014)	(0.014)
District Population	-0.000	-0.000*	-0.000*
	(0.000)	(0.000)	(0.000)
District size	0.000*	-0.000	0.000*
	(0.000)	(0.000)	(0.000)
Constant	-0.373*	0.143*	0.628*
	(0.067)	(0.069)	(0.071)
Fixed effects?	yes	yes	yes
N		115394	

Table D: Multivariate probit regressions testing whether the level of education affects preferences across public goods. Note that all models were estimated simultaneously. Table displays coefficients estimated with vanilla standard errors. * $p<0.05$. Standard errors in parentheses. Corresponds to Table 2 in the article.

2.2 Models with errors clustered on the district level

We utilize data on 123,000 households in 774 Nigerian districts. It is conceivable that the information obtained from each household is not independent from the information of other households — particularly if they are located in the same district. Researchers typically account for this by estimating their models with standard errors clustered at the district level. To alleviate concerns that this might be necessary in our case, this section displays re-estimates of all models presented in the article, using standard errors clustered on the district level.

The substantive interpretation of the results is unaffected by this modification as the large majority of independent variables continue to have positive and statistically significant coefficients. Why do clustered standard errors have little effect on sample precision? The reason for the lack of differences lies in the sampling procedure described in Section 4 of the article. The survey employed two-stage cluster sampling in each district by first randomly sampling 10 Enumeration Areas in each district. The second stage was a random sample of 10 housing units within each Enumeration Area. This resulted in 100 housing units per district, with all households within each housing unit being interviewed in-person, resulting in a high degree of heterogeneity within clusters. For this reason, the standard errors for the variables are likely inversely proportional to the square root of the number of households rather than the number of clusters.

	Should all seasons roads be provided?	Should sanitation facilities be provided?	Should police services be provided?	Should electricity be provided?
Owns motorcycle	0.088*			
	(0.020)			
Homeowner	0.184*	0.082*	0.140*	0.247*
	(0.022)	(0.022)	(0.021)	(0.025)
Road construction in last 5 years	-0.358*			
	(0.038)			
Roads tarring in last 5 years	-0.225*			
	(0.029)			
Transportation services project in last 5 years	-0.184*			
	(0.041)			
Sanitation project in last 5 years		-0.880*		
		(0.044)		
Police services improved in last 5 years			-1.039*	
			(0.037)	
Electrification project in last 5 years				-1.071*
				(0.043)
2nd Welfare Quintile	-0.154*	0.009	-0.079*	-0.165*
	(0.030)	(0.032)	(0.031)	(0.033)
3rd Welfare Quintile	-0.283*	-0.041	-0.197*	-0.327*
	(0.034)	(0.034)	(0.034)	(0.036)
4th Welfare Quintile	-0.422*	-0.075*	-0.231*	-0.506*
	(0.035)	(0.034)	(0.034)	(0.036)
5th Welfare Quintile	-0.588*	-0.115*	-0.339*	-0.808*
	(0.038)	(0.037)	(0.037)	(0.042)
Female	-0.071*	-0.019	-0.014	-0.074*
	(0.026)	(0.024)	(0.026)	(0.027)
Age	-0.002*	-0.002*	-0.002*	-0.003*
	(0.001)	(0.001)	(0.001)	(0.001)
Married	0.037	-0.009	0.057*	0.077*
	(0.021)	(0.022)	(0.022)	(0.024)
Urban	-0.498*	-0.149*	-0.425*	-0.752*
	(0.040)	(0.035)	(0.039)	(0.044)
District Population	-0.000	-0.000*	-0.000	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)
District size	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.534	0.674	0.992*	1.630*
	(0.355)	(0.463)	(0.412)	(0.377)
Fixed effects?	yes	yes	yes	yes
N	115106			

Table E: Multivariate probit regressions testing whether the type of asset owned affects preferences across public goods. Note that all models were estimated simultaneously. Table displays coefficients estimated with standard errors clustered on the district level. * $p<0.05$. Standard errors in parentheses. Corresponds to Table 1 in the article.

	Should school facilities be provided?	Should health facilities be provided?	Should sanitation facilities be provided?
No Schooling	0.070*	0.081*	0.030
	(0.021)	(0.020)	(0.020)
School construction in last 5 years	-0.551*		
	(0.030)		
School rehabilitation in last 5 years	-0.318*		
	(0.024)		
Health facility construction in last 5 years		-0.736*	
		(0.032)	
Health facility rehabilitation in last 5 years		-0.472*	
		(0.030)	
Sanitation project in last 5 years			-0.944*
			(0.049)
2nd Welfare Quintile	-0.104*	-0.113*	0.026
	(0.027)	(0.028)	(0.032)
3rd Welfare Quintile	-0.254*	-0.282*	-0.010
	(0.031)	(0.032)	(0.035)
4th Welfare Quintile	-0.323*	-0.401*	-0.032
	(0.033)	(0.034)	(0.036)
5th Welfare Quintile	-0.371*	-0.472*	-0.041
	(0.036)	(0.036)	(0.039)
Female	-0.006	-0.052	-0.022
	(0.026)	(0.027)	(0.025)
Age	-0.003*	-0.003*	-0.002*
	(0.001)	(0.001)	(0.001)
Married	0.052*	0.063*	-0.009
	(0.022)	(0.024)	(0.022)
Homeowner	0.100*	0.134*	0.061*
	(0.022)	(0.023)	(0.022)
Urban	-0.294*	-0.334*	-0.108*
	(0.035)	(0.038)	(0.035)
District Population	-0.000	-0.000*	-0.000*
	(0.000)	(0.000)	(0.000)
District size	0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)
Constant	-0.373	0.143	0.628
	(0.345)	(0.345)	(0.473)
Fixed effects?	yes	yes	yes
N		115394	

Table F: Multivariate probit regressions testing whether the level of education affects preferences across public goods. Note that all models were estimated simultaneously. Table displays coefficients estimated with standard errors clustered on the district level. * $p<0.05$. Standard errors in parentheses. Corresponds to Table 2 in the article.

3 Robustness tests

3.1 Robustness test 1: Differences in wealth driving demand?

It might be the case that the determinants of preferences for specific public goods differ across rich and poor Nigerians. While our analysis controls for the welfare quintile of households, combining all households into the same analysis might provide inaccurate estimates if likes and dislikes cancel each other out. For this reason, we test H1 and H2 separately on the subset of poor and rich Nigerians. Tables G and K present the results. We find that the results for both hypotheses are identical among the rich and the poor; therefore, differences in wealth are not driving our results.

	Rich				Poor			
	Roads	Sanitation	Police	Electricity	Roads	Sanitation	Police	Electricity
Owns motorcycle	0.102*				0.082*			
	(0.015)				(0.015)			
Homeowner	0.170*	0.107*	0.149*	0.317*	0.184*	0.069*	0.135*	0.203*
	(0.018)	(0.019)	(0.018)	(0.019)	(0.014)	(0.014)	(0.014)	(0.014)
Road construction in last 5 years	-0.331*				-0.374*			
	(0.020)				(0.018)			
Roads tarring in last 5 years	-0.177*				-0.271*			
	(0.017)				(0.015)			
Transportation services project in last 5 years	-0.153*				-0.206*			
	(0.019)				(0.018)			
Sanitation project in last 5 years		-0.901*				-0.866*		
		(0.018)				(0.015)		
Police services improved in last 5 years			-1.032*				-1.028*	
			(0.017)				(0.014)	
Electrification project in last 5 years				-0.921*				-1.199*
				(0.018)				(0.016)
2nd Welfare Quintile					-0.157*	-0.002	-0.084*	-0.175*
					(0.012)	(0.012)	(0.012)	(0.013)
3rd Welfare Quintile					-0.290*	-0.060*	-0.205*	-0.352*
					(0.013)	(0.013)	(0.013)	(0.013)
5th Welfare Quintile	-0.171*	-0.023	-0.123*	-0.299*				
	(0.013)	(0.014)	(0.013)	(0.014)				
Female	-0.027	0.062*	0.015	-0.025	-0.092*	-0.057*	-0.023	-0.107*
	(0.029)	(0.030)	(0.029)	(0.030)	(0.019)	(0.019)	(0.019)	(0.020)
Age	-0.000	-0.002*	-0.003*	-0.004*	-0.003*	-0.002*	-0.002*	-0.003*
	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Married	0.054*	0.045	0.068*	0.109*	0.022	-0.031	0.046*	0.059*
	(0.024)	(0.024)	(0.024)	(0.025)	(0.017)	(0.017)	(0.016)	(0.017)
Urban	-0.405*	-0.110*	-0.272*	-0.472*	-0.528*	-0.170*	-0.474*	-0.838*
	(0.026)	(0.027)	(0.026)	(0.028)	(0.017)	(0.017)	(0.016)	(0.017)
District Population	-0.000	-0.000*	0.000*	-0.000	-0.000*	-0.000*	-0.000*	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
District size	0.000*	0.000*	0.000*	0.000*	0.000	-0.000	-0.000*	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	-0.138	-0.077	0.411*	1.132*	0.594*	0.985*	1.088*	1.582*
	(0.115)	(0.124)	(0.116)	(0.120)	(0.083)	(0.085)	(0.081)	(0.087)
Fixed Effects?	yes	yes	yes	yes	yes	yes	yes	yes
N	39823				75283			

Table G: Multivariate probit regressions testing whether the type of asset owned affects preferences across public goods, with data subset by rich and poor. Note that all models were estimated simultaneously. Table displays coefficients estimated with vanilla standard errors. * $p<0.05$. Standard errors in parentheses.

	Rich			Poor		
	Schools	Health	Sanitation	Schools	Health	Sanitation
No Schooling	0.086*	0.109*	0.048*	0.067*	0.072*	0.029*
	(0.017)	(0.017)	(0.019)	(0.013)	(0.013)	(0.013)
School construction in last 5 years	-0.465*			-0.604*		
	(0.014)			(0.012)		
School rehabilitation in last 5 years	-0.252*			-0.355*		
	(0.013)			(0.011)		
Health facility construction in last 5 years		-0.600*			-0.826*	
		(0.016)			(0.014)	
Health facility rehabilitation in last 5 years		-0.360*			-0.567*	
		(0.015)			(0.014)	
Sanitation project in last 5 years			-0.946*			-0.947*
			(0.020)			(0.018)
2nd Welfare Quintile				-0.114*	-0.120*	0.018
				(0.012)	(0.013)	(0.012)
3rd Welfare Quintile				-0.272*	-0.301*	-0.026
				(0.013)	(0.013)	(0.013)
4th Welfare Quintile	0.054*	0.075*	-0.018			
	(0.013)	(0.013)	(0.014)			
Female	0.012	-0.021	0.052	-0.009	-0.070*	-0.067*
	(0.029)	(0.029)	(0.030)	(0.019)	(0.020)	(0.020)
Age	-0.003*	-0.003*	-0.002*	-0.003*	-0.003*	-0.002*
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Married	0.078*	0.034	0.042	0.037*	0.064*	-0.034*
	(0.023)	(0.023)	(0.025)	(0.016)	(0.017)	(0.017)
Homeowner	0.082*	0.095*	0.084*	0.104*	0.150*	0.044*
	(0.018)	(0.018)	(0.019)	(0.014)	(0.014)	(0.014)
Urban	-0.162*	-0.167*	-0.097*	-0.333*	-0.384*	-0.118*
	(0.027)	(0.026)	(0.028)	(0.017)	(0.017)	(0.017)
District Population	-0.000	-0.000*	-0.000*	-0.000	-0.000*	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
District size	0.000	-0.000	0.000*	0.000*	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	-0.436*	-0.142	-0.039	-0.565*	-0.021	0.904*
	(0.117)	(0.116)	(0.127)	(0.082)	(0.087)	(0.087)
Fixed Effects?	yes	yes	yes	yes	yes	yes
N	39478			75916		

Table H: Multivariate probit regressions testing whether the level of education affects preferences across public goods, with data subset by rich and poor. Note that all models were estimated simultaneously. Table displays coefficients estimated with vanilla standard errors. * $p<0.05$. Standard errors in parentheses.

3.2 Robustness test 2: Different measures for wealth

The welfare quintile is a self-reported measure of wealth and thus might be inaccurate. Consequently, we re-estimate our models with alternative measures of household wealth that might be considered more objective. Specifically, we use variables that indicate whether a household owns a television or whether a household owns a refrigerator. Tables I and J present the results for H1 and H2, respectively. The findings are not affected when controlling for wealth with these alternative variables.

	TVs as proxy for wealth				Refrigerators as proxy for wealth			
	Roads	Sanitation	Police	Electricity	Roads	Sanitation	Police	Electricity
Refrigerator					-0.194*	-0.096*	-0.165*	-0.352*
					(0.013)	(0.013)	(0.013)	(0.014)
Television	-0.228*	-0.098*	-0.226*	-0.492*				
	(0.011)	(0.011)	(0.011)	(0.011)				
Owns motorcycle	0.015				0.005			
	(0.010)				(0.010)			
Homeowner	0.147*	0.075*	0.117*	0.190*	0.159*	0.078*	0.126*	0.204*
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Road construction in last 5 years	-0.382*				-0.383*			
	(0.014)				(0.014)			
Roads tarring in last 5 years	-0.245*				-0.247*			
	(0.011)				(0.011)			
Transportation services project in last 5 years	-0.217*				-0.218*			
	(0.013)				(0.013)			
Sanitation project in last 5 years		-0.874*				-0.875*		
		(0.012)				(0.012)		
Police services improved in last 5 years			-1.046*				-1.044*	
			(0.011)				(0.011)	
Electrification project in last 5 years				-1.124*				-1.140*
				(0.012)				(0.012)
Female	-0.049*	-0.016	-0.005	-0.051*	-0.028	-0.007	0.018	-0.001
	(0.016)	(0.016)	(0.016)	(0.017)	(0.016)	(0.016)	(0.016)	(0.016)
Age	-0.002*	-0.002*	-0.002*	-0.004*	-0.002*	-0.002*	-0.002*	-0.003*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Married	0.034*	-0.005	0.066*	0.086*	0.028*	-0.004	0.062*	0.071*
	(0.014)	(0.014)	(0.013)	(0.014)	(0.014)	(0.014)	(0.013)	(0.014)
Urban	-0.384*	-0.121*	-0.350*	-0.580*	-0.402*	-0.129*	-0.371*	-0.626*
	(0.014)	(0.014)	(0.014)	(0.015)	(0.014)	(0.014)	(0.014)	(0.014)
District Population	-0.000*	-0.000*	-0.000	-0.000*	-0.000*	-0.000*	-0.000	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
District size	0.000*	0.000	0.000	0.000	0.000*	0.000	0.000	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.656*	0.981*	1.274*	1.881*	0.348*	0.917*	1.009*	1.324*
	(0.066)	(0.070)	(0.066)	(0.070)	(0.066)	(0.069)	(0.065)	(0.068)
Fixed Effects?	yes	yes	yes	yes	yes	yes	yes	yes
N	114686				114549			

Table I: Multivariate probit regressions testing whether the type of asset owned affects preferences across public goods, with welfare quintile control variable replaced by alternative measures of wealth. Note that all models were estimated simultaneously. Table displays coefficients estimated with vanilla standard errors. * $p<0.05$. Standard errors in parentheses.

	TVs as proxy for wealth			Refrigerators as proxy		
	Schools	Health	Sanitation	Schools	Health	Sanitation
Refrigerator				-0.083*	-0.107*	-0.069*
				(0.013)	(0.013)	(0.014)
Television	-0.128*	-0.156*	-0.075*			
	(0.011)	(0.011)	(0.011)			
No Schooling	0.117*	0.140*	0.022*	0.131*	0.152*	0.026*
	(0.010)	(0.010)	(0.011)	(0.010)	(0.010)	(0.011)
School construction in last 5 years	-0.562*			-0.564*		
	(0.009)			(0.009)		
School rehabilitation in last 5 years	-0.337*			-0.339*		
	(0.008)			(0.008)		
Health facility construction in last 5 years		-0.753*			-0.757*	
		(0.010)			(0.010)	
Health facility rehabilitation in last 5 years		-0.499*			-0.500*	
		(0.010)			(0.010)	
Sanitation project in last 5 years			-0.941*			-0.946*
			(0.013)			(0.013)
Female	0.007	-0.036*	-0.021	0.012	-0.020	-0.011
	(0.016)	(0.016)	(0.017)	(0.016)	(0.016)	(0.017)
Age	-0.003*	-0.004*	-0.002*	-0.003*	-0.004*	-0.002*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Married	0.047*	0.052*	-0.006	0.044*	0.050*	-0.005
	(0.013)	(0.014)	(0.014)	(0.013)	(0.014)	(0.014)
Homeowner	0.068*	0.095*	0.060*	0.078*	0.104*	0.066*
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Urban	-0.215*	-0.237*	-0.097*	-0.228*	-0.251*	-0.100*
	(0.014)	(0.014)	(0.015)	(0.014)	(0.014)	(0.015)
District Population	-0.000	-0.000*	-0.000*	-0.000	-0.000*	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
District size	0.000*	-0.000	0.000*	0.000*	-0.000	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	-0.380*	0.143*	0.841*	-0.447*	0.012	0.749*
	(0.066)	(0.068)	(0.071)	(0.066)	(0.068)	(0.071)
Fixed Effects?	yes	yes	yes	yes	yes	yes
N	113732			113545		

Table J: Multivariate probit regressions testing whether the level of education affects preferences across public goods, with welfare quintile control variable replaced by alternative measures of wealth. Note that all models were estimated simultaneously. Table displays coefficients estimated with vanilla standard errors. * $p<0.05$. Standard errors in parentheses.

3.3 Robustness test 3: Homeowners different?

Our theory suggests that households prefer public goods complementing the value of assets they already own. Homeowners, for example, might have different preferences for public goods than renters. Specifically, we would expect homeowners to prefer all goods that improve home values, while renters might be primarily interested in portable public goods. We test this implication in the context of H2. Table K presents the results.

The findings indicate that homeowners demand not only increased spending on education, but also increased spending on health and sanitation facilities. In contrast, non-homeowners want increased spending on education (because its results are portable should the renter move to a different location), while they do not care for increased spending on health and sanitation. This test provides additional evidence consistent with our theory.

	Homeowners			Renter		
	Schools	Health	Sanitation	Schools	Health	Sanitation
No Schooling	0.071*	0.102*	0.066*	0.065*	0.027	-0.063*
	(0.012)	(0.012)	(0.013)	(0.021)	(0.021)	(0.022)
School construction in last 5 years	-0.639*			-0.346*		
	(0.011)			(0.016)		
School rehabilitation in last 5 years	-0.349*			-0.236*		
	(0.010)			(0.015)		
Health facility construction in last 5 years		-0.826*			-0.501*	
		(0.012)			(0.019)	
Health facility rehabilitation in last 5 years		-0.516*			-0.386*	
		(0.012)			(0.017)	
Sanitation project in last 5 years			-0.968*			-0.912*
			(0.017)			(0.021)
2nd Welfare Quintile	-0.093*	-0.125*	0.033*	-0.136*	-0.095*	-0.006
	(0.014)	(0.015)	(0.014)	(0.022)	(0.023)	(0.023)
3rd Welfare Quintile	-0.263*	-0.305*	0.005	-0.221*	-0.246*	-0.065*
	(0.014)	(0.015)	(0.015)	(0.024)	(0.024)	(0.024)
4th Welfare Quintile	-0.357*	-0.459*	-0.035*	-0.229*	-0.263*	-0.059*
	(0.016)	(0.016)	(0.016)	(0.025)	(0.025)	(0.026)
5th Welfare Quintile	-0.382*	-0.519*	-0.042*	-0.348*	-0.376*	-0.072*
	(0.017)	(0.018)	(0.018)	(0.026)	(0.027)	(0.027)
Female	-0.028	-0.064*	-0.024	0.012	-0.045	0.015
	(0.022)	(0.023)	(0.023)	(0.024)	(0.024)	(0.025)
Age	-0.003*	-0.004*	-0.001*	-0.002*	-0.002*	-0.004*
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Married	0.038*	0.080*	0.067*	0.058*	0.014	-0.095*
	(0.019)	(0.019)	(0.020)	(0.020)	(0.020)	(0.020)
Urban	-0.289*	-0.355*	-0.160*	-0.303*	-0.295*	-0.034
	(0.018)	(0.018)	(0.018)	(0.023)	(0.024)	(0.024)
District Population	-0.000*	-0.000*	-0.000*	0.000	-0.000*	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
District size	0.000*	-0.000	0.000	0.000*	-0.000	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	-0.220*	0.265*	0.512*	-0.489*	0.068	0.747*
	(0.085)	(0.088)	(0.091)	(0.115)	(0.116)	(0.122)
Fixed Effects?	yes	yes	yes	yes	yes	yes
N		83779			31615	

Table K: Multivariate probit regressions testing whether the level of education affects preferences across public goods, with data subset by homeowners and non-homeowners. Note that all models were estimated simultaneously. Table displays coefficients estimated with vanilla standard errors. * $p<0.05$. Standard errors in parentheses.

3.4 Robustness test 4: Lack of experience vs. demand what they need

One might wonder if H2 (Households exhibit strong preferences for provision of goods that they lacked in the past) can be distinguished from a related hypothesis: People simply demand public goods that they currently need. We argue that these hypotheses are different and conduct the following analysis to examine their relative importance. We interact our indicator of past experience ('no schooling') with the number of children in the household when estimating demand for schools. Presumably, a higher number of children implies higher current need for schools.

Table L presents the numerical results. However, as the interaction effects are difficult to interpret on basis of the tables only, we visualize the marginal effect of past experience on demand for public goods across the range of the interaction variable, the number of children. Figures A, B, andC present the substantive findings. They illustrate that the current demand (proxied by the number of children) does not significantly affect preferences across schools, health, and sanitation facilities. For example, Figure A shows that the coefficient of past experience is positive and statistically significant irrespective of the number of children. In fact, the confidence intervals of the marginal effects at zero and ten children overlap, suggesting that past experience better explains preferences than current needs.

	Schools	Health	Sanitation
No Schooling	0.051*	0.077*	0.018
	(0.014)	(0.015)	(0.015)
Number Children	-0.003	-0.004	0.003
	(0.002)	(0.002)	(0.002)
Interaction	0.006	0.001	0.004
	(0.003)	(0.003)	(0.003)
School construction in last 5 years	-0.551*		
	(0.009)		
School rehabilitation in last 5 years	-0.318*		
	(0.008)		
Health facility construction in last 5 years		-0.735*	
		(0.010)	
Health facility rehabilitation in last 5 years		-0.471*	
		(0.010)	
Sanitation project in last 5 years			-0.945*
			(0.013)
2nd Welfare Quintile	-0.104*	-0.113*	0.025*
	(0.012)	(0.012)	(0.012)
3rd Welfare Quintile	-0.255*	-0.282*	-0.011
	(0.012)	(0.013)	(0.013)
4th Welfare Quintile	-0.324*	-0.400*	-0.034*
	(0.013)	(0.014)	(0.014)
5th Welfare Quintile	-0.372*	-0.470*	-0.045*
	(0.014)	(0.015)	(0.015)
Female	-0.003	-0.049*	-0.022
	(0.016)	(0.016)	(0.017)
Age	-0.003*	-0.003*	-0.002*
	(0.000)	(0.000)	(0.000)
Married	0.055*	0.071*	-0.017
	(0.014)	(0.014)	(0.014)
Homeowner	0.100*	0.136*	0.059*
	(0.011)	(0.011)	(0.011)
Urban	-0.294*	-0.334*	-0.109*
	(0.014)	(0.014)	(0.014)
District Population	-0.000	-0.000*	-0.000*
	(0.000)	(0.000)	(0.000)
District size	0.000*	-0.000	0.000*
	(0.000)	(0.000)	(0.000)
Constant	-0.368*	0.141*	0.637*
	(0.067)	(0.069)	(0.071)
Fixed Effects?	yes	yes	yes
N		115394	

Table L: Multivariate probit regressions testing whether the level of education affects preferences across public goods, including an interaction of 'no schooling' and number of children. Note that all models were estimated simultaneously. Table displays coefficients estimated with vanilla standard errors. * $p<0.05$. Standard errors in parentheses.

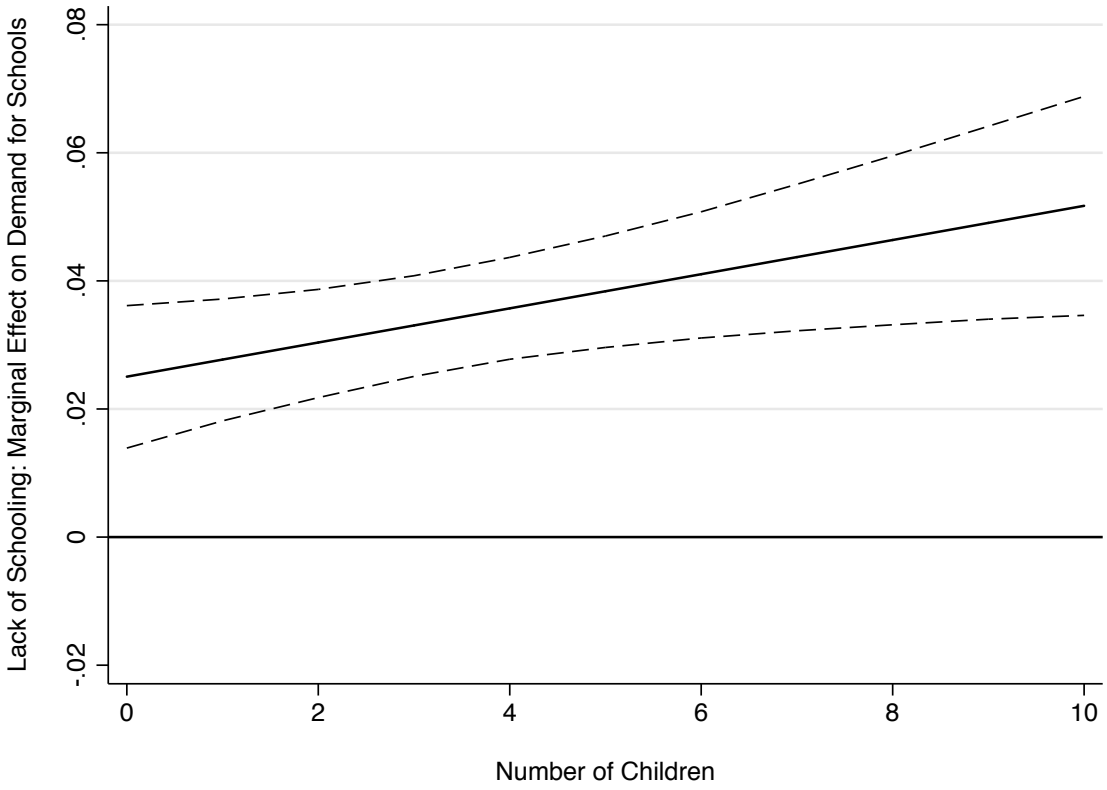

Figure A: Marginal effect of past experience on the demand for schools, conditional on the number of children. The findings indicate that the coefficient for past experience does not differ significantly when comparing households with few or many children.

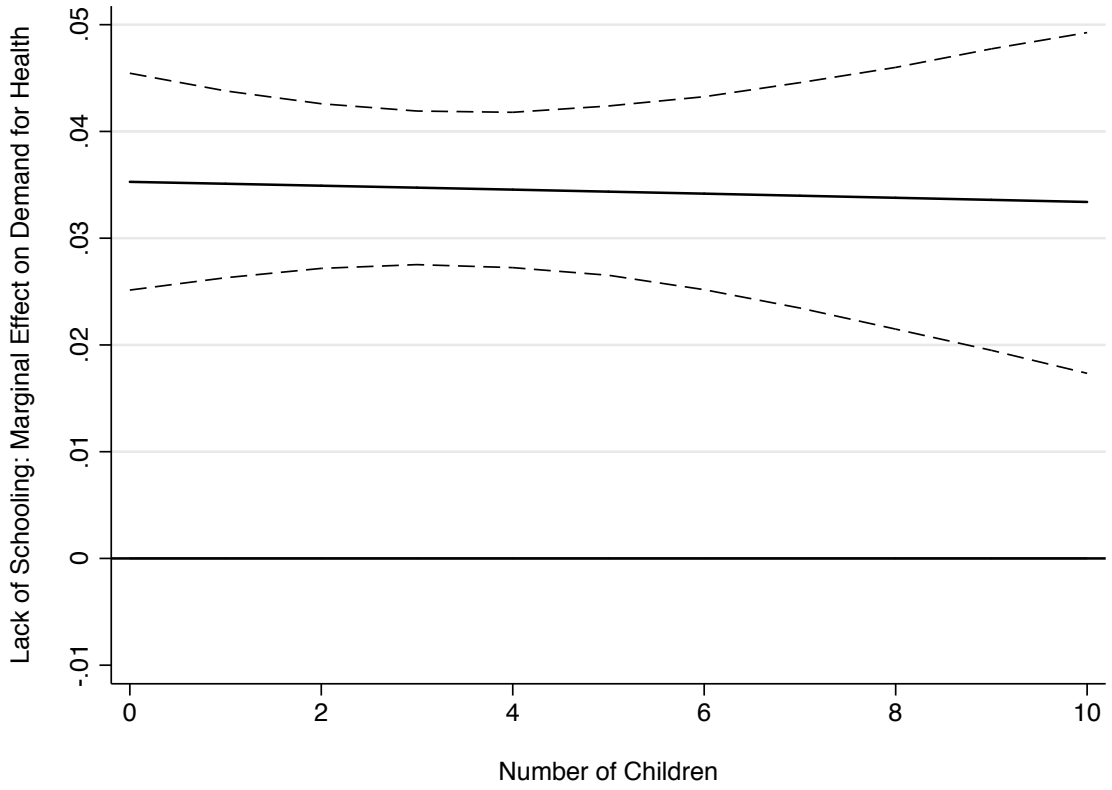

Figure B: Marginal effect of past experience on the demand for health facilities, conditional on the number of children. The findings indicate that the coefficient for past experience does not differ significantly when comparing households with few or many children.

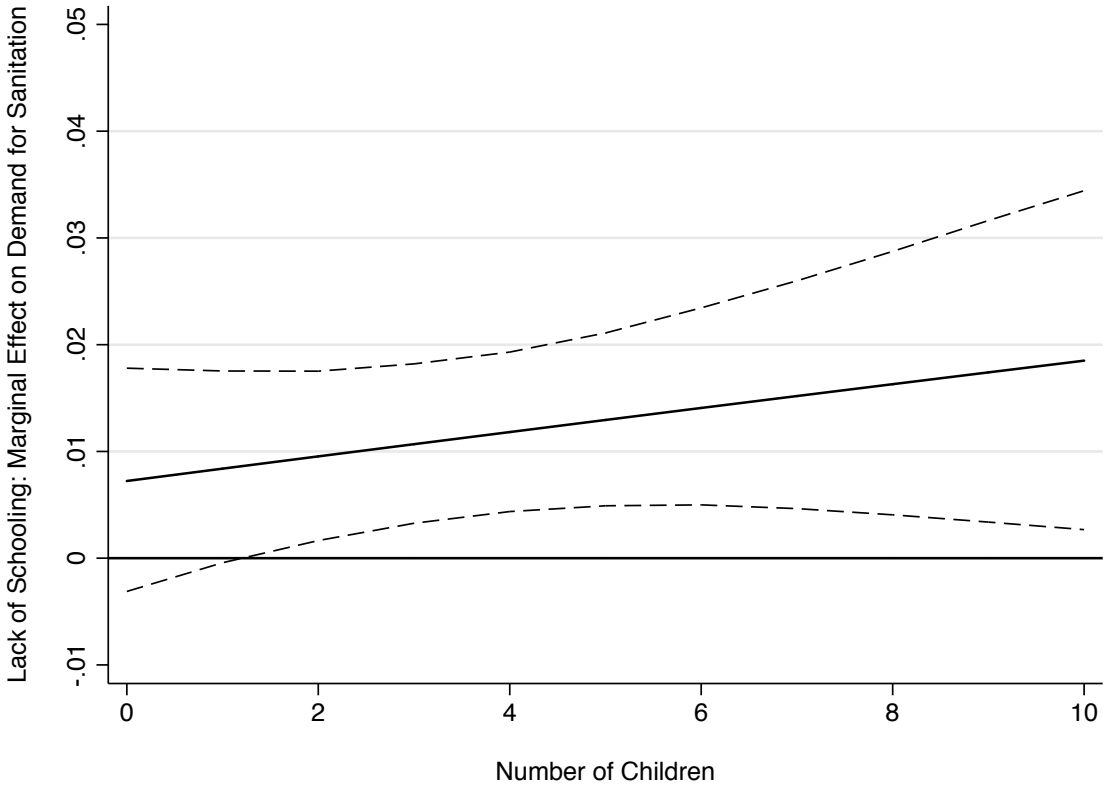

Figure C: Marginal effect of past experience on the demand for sanitation facilities, conditional on the number of children. The findings indicate that the coefficient for past experience does not differ significantly when comparing households with few or many children.

3.5 Robustness test 5: Joint estimation of both hypotheses simultanesouly

In the main paper, we tested the effect of assets and past experience on preferences for particular types of public goods. To do so, we implemented *separate* estimations of multiple equation models for each category. We recognize that interdependency might exist not only among types of public goods that complement assets or among types of goods that are demanded due to prior experiences. Rather, we can also reasonably assume that the category effects on preferences for different public goods are interdependent.

We account for these possibilities by estimating a six-equation multivariate probit model analyzing the effect of assets and prior experience on the preferences for multiple types of public goods simultaneously. This multivariate probit model includes multiple public goods as dependent variables — all seasons roads, police services, electrification, sanitation, school and health facilities — and estimates the factors affecting the preferences for these public goods simultaneously.

Note that the multivariate probit model does not allow for using the same dependent variable twice. However, we operationalized both Hypothesis 1 and Hypothesis 2 using the provision of sanitation facilities as a dependent variable. Consequently, we dropped one of these operationalizations in this simultaneous equation approach. We first report the model that includes sanitation facilities in the estimations for Hypothesis 1 but excludes them with respect to Hypothesis 2.

The results of this all-encompassing simultaneous equation model are shown in Table M. All key explanatory variables — asset ownership and head of household education — show significance in relation to their respective public good dependent variable, even when accounting for interdependencies. These results provide strong evidence that preferences for public goods are shaped by the socio-economic characteristics of households.

	Should all seasons roads be provided?	Should sanitation facilities be provided?	Should police services be provided?	Should electricity be provided?	Should school facilities be provided?	Should health facilities be provided?
Owns motorcycle	0.085*					
	(0.010)					
Homeowner	0.188*	0.080*	0.138*	0.249*	0.099*	0.137*
	(0.011)	(0.011)	(0.011)	(0.012)	(0.011)	(0.012)
No Schooling					0.062*	0.068*
					(0.010)	(0.010)
Time to drinking water more than 15 Minutes						
Road construction in last 5 years	-0.335*					
	(0.014)					
Roads tarring in last 5 years	-0.221*					
	(0.011)					
Transportation services project in last 5 years	-0.165*					
	(0.013)					
Sanitation project in last 5 years		-0.874*				
		(0.012)				
Police services improved in last 5 years			-1.018*			
			(0.012)			
Electrification project in last 5 years				-1.059*		
				(0.013)		
School construction in last 5 years					-0.536*	
					(0.009)	
School rehabilitation in last 5 years					-0.272*	
					(0.008)	
Health facility construction in last 5 years						-0.729*
						(0.011)
Health facility rehabilitation in last 5 years						-0.410*
						(0.010)
2nd Welfare Quintile	-0.158*	0.001	-0.085*	-0.170*	-0.114*	-0.121*
	(0.012)	(0.013)	(0.013)	(0.013)	(0.012)	(0.013)
3rd Welfare Quintile	-0.285*	-0.044*	-0.204*	-0.340*	-0.267*	-0.293*
	(0.013)	(0.013)	(0.013)	(0.013)	(0.012)	(0.013)
4th Welfare Quintile	-0.428*	-0.082*	-0.235*	-0.513*	-0.336*	-0.408*
	(0.014)	(0.014)	(0.014)	(0.014)	(0.013)	(0.014)
5th Welfare Quintile	-0.595*	-0.124*	-0.349*	-0.820*	-0.394*	-0.497*
	(0.015)	(0.015)	(0.015)	(0.016)	(0.015)	(0.015)
Female	-0.075*	-0.022	-0.006	-0.078*	-0.015	-0.058*
	(0.016)	(0.017)	(0.017)	(0.017)	(0.016)	(0.017)
Age	-0.002*	-0.002*	-0.002*	-0.004*	-0.003*	-0.003*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Married	0.038*	-0.006	0.068*	0.074*	0.055*	0.058*
	(0.014)	(0.014)	(0.014)	(0.015)	(0.014)	(0.015)
Urban	-0.497*	-0.149*	-0.414*	-0.745*	-0.301*	-0.345*
	(0.014)	(0.015)	(0.015)	(0.016)	(0.014)	(0.015)
District Population	-0.000*	-0.000*	-0.000	-0.000*	-0.000	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
District size	0.000*	0.000*	0.000	0.000	0.000*	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.585*	0.636*	0.982*	1.631*	-0.425*	0.116
	(0.069)	(0.070)	(0.069)	(0.074)	(0.068)	(0.072)
Fixed Effects?	yes	yes	yes	yes	yes	yes
N	110944					

Table M: Multivariate probit regressions *simultaneously* testing the different operationalizations of Hypotheses 1 and 2. Control variables include the welfare quintile, gender, age, and marital status of respondents, as well as district population, district size, and an indicator for rural versus urban location. The results indicate the assets owned by a household and the level of education affects preferences across public goods. * $p<0.05$. Standard errors in parentheses.

We also estimated the corresponding model, including sanitation facilities in the Hypothesis 2 estimations and excluding them with respect to Hypothesis 1. In other words, instead of explaining the preferences for sanitation facilities with the assets owned by households, we now use the level of education as the key independent variable in the system of equations. These table Table N presents the numerical results. The substantive

interpretation remains robust to this change.

	Should all seasons roads be provided?	Should police services be provided?	Should electricity be provided?	Should school facilities be provided?	Should health facilities be provided?	Should sanitation facilities be provided?
Owns motorcycle	0.087*					
	(0.010)					
Homeowner	0.188*	0.137*	0.250*	0.102*	0.138*	0.082*
	(0.011)	(0.011)	(0.012)	(0.011)	(0.012)	(0.012)
No Schooling				0.064*	0.070*	0.013
				(0.010)	(0.010)	(0.009)
Time to drinking water more than 15 Minutes						
Road construction in last 5 years	-0.335*					
	(0.014)					
Roads tarring in last 5 years	-0.222*					
	(0.011)					
Transportation services project in last 5 years	-0.165*					
	(0.013)					
Sanitation project in last 5 years						-0.872*
						(0.012)
Police services improved in last 5 years		-1.022*				
		(0.012)				
Electrification project in last 5 years			-1.059*			
			(0.013)			
School construction in last 5 years				-0.535*		
				(0.009)		
School rehabilitation in last 5 years				-0.272*		
				(0.008)		
Health facility construction in last 5 years					-0.728*	
					(0.011)	
Health facility rehabilitation in last 5 years					-0.406*	
					(0.010)	
2nd Welfare Quintile	-0.158*	-0.089*	-0.169*	-0.114*	-0.118*	0.007
	(0.012)	(0.012)	(0.013)	(0.012)	(0.013)	(0.013)
3rd Welfare Quintile	-0.285*	-0.205*	-0.338*	-0.266*	-0.290*	-0.038*
	(0.013)	(0.013)	(0.013)	(0.012)	(0.013)	(0.013)
4th Welfare Quintile	-0.428*	-0.235*	-0.511*	-0.336*	-0.408*	-0.075*
	(0.014)	(0.014)	(0.014)	(0.013)	(0.014)	(0.014)
5th Welfare Quintile	-0.595*	-0.354*	-0.821*	-0.395*	-0.499*	-0.119*
	(0.015)	(0.014)	(0.016)	(0.015)	(0.015)	(0.015)
Female	-0.075*	-0.006	-0.076*	-0.013	-0.054*	-0.021
	(0.016)	(0.017)	(0.017)	(0.016)	(0.017)	(0.017)
Age	-0.002*	-0.002*	-0.004*	-0.003*	-0.003*	-0.002*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Married	0.037*	0.068*	0.076*	0.058*	0.059*	-0.007
	(0.014)	(0.014)	(0.015)	(0.014)	(0.015)	(0.014)
Urban	-0.497*	-0.415*	-0.742*	-0.302*	-0.348*	-0.143*
	(0.014)	(0.015)	(0.016)	(0.014)	(0.015)	(0.015)
District Population	-0.000*	-0.000	-0.000*	-0.000	-0.000*	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
District size	0.000*	0.000	0.000	0.000*	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.582*	0.972*	1.636*	-0.424*	0.114	0.619*
	(0.069)	(0.069)	(0.074)	(0.068)	(0.072)	(0.071)
Fixed Effects?	yes	yes	yes	yes	yes	yes
N	110944					

Table N: Multivariate probit regressions simultaneously testing whether the assets owned by a household and the level of education affects preferences across public goods. Note that all models were estimated simultaneously. Table displays coefficients estimated with robust standard errors. * $p<0.05$. Standard errors in parentheses.