The Effect of Children on Voter Turnout

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Abstract

There has been much research in economics concerned with the factors affecting voter turnout. This research has so far ignored how the presence of children affects an individual's propensity to vote. This paper shows that having young children decreases the likelihood of voting. Low income individuals are especially vulnerable to this increased cost of voting due to children, while higher income individuals are unaffected. The effect also varies across states and urban and rural populations. These differences seem to be driven by varying wait times at polling stations. Understanding how children affect voter turnout is important in developing policies aimed at increasing political participation.

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1 Introduction

There has been much research regarding voter turnout, and more specifically, the costs associated with voting. Many papers have shown that individuals are affected by a wide range of costs, including distance to polling station, wait times, voter fatigue, among others. (Rosenstone Wolfinger 1978; Gimpel and Schuknecht 2003; Berinsky et. al 2008; Railings, Thrasher, Borisyuk 2003). The literature has so far ignored how children affect the cost of voting. If having young children increases the cost of voting, then we would expect that families with young children to vote less often. We should also take into account compounding costs for voters. Individuals with high costs initially may be disproportionately burdened by taking care of a young child, and therefore political participation in these vulnerable groups may decrease even further.

Before delving into how children alter the costs of voting, it is worthwhile to review the economics and political science literature regarding the determinants of voting in order to understand the motivations for this research. It is often argued that high voter turnout signals the legitimacy of the current system, and therefore it is important to study what motivates people to vote, and alternatively, what prevents them from voting. Robust voting patterns have arisen from the research. Some studies have sought to understand the international disparities in voter turnout. Research has found various explanations for this observed disparity, including institutional factors such as nationally competitive districts, unicameralism, multipartyism, electoral disproportionality, and voting laws (Jackman 1987). Others concentrate on cultural factors such as trust in government, partisanship, and interest in politics (Powell 1986). Voting patterns on an individual level have also been widely researched. Established results show that marital status, age, gender, family income, and education are all correlated with voting (Verba and Nie 1972; Wolfinger Rosenstone 1980). This literature, though, has ignored how the presence of children affects an individual's propensity to vote.

Another strain of literature related to this paper studies how family can affect an individual's choices and behaviors. For example, a paper by Alesina and Giuliano (2010) studies how reliance on family for services, insurance, and transfers affects one's political participation. Similarly, my research provides evidence for an effect of family composition on voting behavior. The key finding is that the presence of young children in the home decreases the likelihood to vote, while having older children, especially between the ages 10 to 13, may actually increase the probability of voting.

The theoretical foundation and motivation for this research comes from Downs' seminal 1957 study, *An Economic Theory of Democracy*. In Downs' book, he proposes that an individual votes if $pB > C$, where p is the probability of being pivotal, B is the benefit if the person's favored candidate wins, and C is the cost associated with voting. Studies have extended Downs' research to include the parameter D (Riker and Ordeshook 1968), which is often used to denote a measure of a person's civic duty, but in a more general sense, it can denote any internal satisfaction gained from voting. Thus, a person votes if $pB + D > C$

The presence of children is likely to change many of these parameters. Initially, the most salient change is likely to stem from an increased cost of voting. That is, C increases because parents of young children may face more obstacles when voting than those without children. At the same time, it might be reasonable to assume that B increases with number of children. Parents are likely to take into account not only their own benefits, but also the benefits accrued to their children if their favored candidate wins. This would, in theory, increase the likelihood of voting for these individuals, but given that p is so small in any national election, it is probably unlikely that this increase in the benefits will have any noticeable impact on voting. That is, unless people do not accurately estimate the value of p, as is shown in Blaise, Young, and Lapp (2000). In the case that people do highly overestimate their likelihood to be pivotal, then this increase in B may actually change an individual's behavior.

The value of D might also change when a child is born, but the direction of the change is ambiguous. One possibility is that those with children will feel an obligation to vote in order to set a good example for their children. Voting is often seen as a way of fulfilling one's civic duties and parents may vote in order to instill desirable political morals into their children. On the other hand, having children may decrease the amount of time parents have to engage in other activities related to politics. For example, parents may not have as much time to read articles about the races, or watch news coverage, or discuss the race with friends, and therefore they might not be as invested in the outcome or as interested in the race. This can affect the paramter D in a variety ways. For example, one internal satisfaction of voting listed by Riker and Ordeshook (1968) includes the satisfaction from researching and making a decision. The satisfaction derived from this motivation is likely to be highly correlated with the level of interest in the current race. In other papers, it has been shown that political awareness does in fact increase voting (Strate et. al 1989). In a set of regressions, I provide further evidence for this finding by showing that participating in many of the activities listed above is highly correlated with voting behavior.

So far I have focused on changes in parameters due to the presence of a child, but the focus of this paper is not on the presence of children, but rather the ages of children. It is very likely that the parameters will change as a child ages. For example, in the early years of a child's life, the increase in the cost of voting is likely to be the most noticeable effect. The cost is then likely to decrease once the child starts school. Also, the increase in D due to the desire to set a good example may not occur when the child is born, but later, when the child begins to learn about the democratic process. Therefore, it is in this age range that we might expect the increase in D to have a noticeable effect on voting behavior.

2 Empirical Methodology and Data Set

The hypothesis that test is whether having young children causes people to vote less. I estimate a regression of the form:

$$Vote_i = \beta_0 + \beta_{ChildUnder6} * ChildUnder6_i + \beta_{Child6to9} * Child6to9_i + \beta_{Child10to13} * Child10to13 + \pi X^{'} + u_i \quad (1)$$

The dependent variable of interest in this study is the binary variable "Vote." This variable takes on a value of 1 if the individual has voted and a value of 0 otherwise. The ANES contains both self-reported voting records data and validated voting data. For the following analysis, the validated voting data are used, but the results do not change significantly when using the self-reported data. "Child Under 6" is a binary variable which takes on a value of 1 if the individual has at least 1 child under 6. The variables "Child 6 to 9" and "Child 10 to 13" are also binary variables taking on a value of 1 if the individual has at least 1 child in the given age group and 0 otherwise. The variable "Child 14 to 17" is not displayed in equation (1) because it is only included in regressions which include the entire population. Due to possible sample selection bias, I drop all individuals without children under 18 in the regressions of primary interest. Therefore, in these regressions I omit "Child 14 to 17" to avoid multicollinearity between variables.

The data are drawn from the American National Election Studies (ANES), a repeated cross-sectional survey done during both Presidential and Interim Election years. This data set has been used in many previous studies, such as Mullainathan and Washington (2009), Edlund and Rohini (2002), and Glaeser, Ponzetto, and Shapiro (2005). An advantage of the ANES data set is that it contains a wide range of demographic and general opinion questions. However, the ANES does not inquire about the age of children living in the household for every year, and therefore many years are dropped from the analysis. The years contained in the sample are the even numbered years between 1978 and 1990.

In the regression equation displayed above, X is a vector of control variables taking into account various demographic characteristics that might be correlated with both the decision to have children and the decision to vote. Table 1 summarizes all of the controls used in the various regressions. There are numerous variables which are certainly correlated with the decision to vote and the decision to have children, and therefore omitting these variables may bias our estimates. For example, level of education has been shown to be a strong predictor of whether an individual votes or not (Wolfinger and Rosenstone 1980), but education may also be correlated with number of children. Fertility patterns differ between various education levels, with more educated individuals having fewer children on average (Bachu 1991). Therefore, highly educated couples will be less likely to have children in the various age groups, and they will also be more likely to vote. Therefore, I include dummy variables indicating an individual's highest level of education. Dummy variables for "Some High School," "High School," "Some College," and "College" are included in the regression, while the variable "No High School" is omitted to prevent multicollinearity between the variables. Family income might also be an important control to include. The variable "Family Income" takes on integer values from 1 to 5. A value of 1 indicates that the individual is in the 0 to 16 percentile of the earnings distribution; 2 indicates the individual is in the 17 to 33 percentile of earnings; 3 indicates the individual is in the 34 to 67 percentile of earnings; 4 indicates the individual is in the 68 to 95 percentile of earning; 5 indicates the individual is in the 96 to 99 percentile. Dummy variables for race include "Black," "Asian," "Hispanic," and "Other." The variable "White" is omitted from the regression. I also include dummy variables for gender, marital status, urbanism, state of birth, and year. All standard errors are clustered by state.

One key difficulty in this research is that the age of children and age of parents are highly correlated, i.e. we would expect a couple with a young child to be younger than a couple with an older child. This is of particular concern because age has been shown to be highly

correlated with the probability of voting, and so ignoring this key aspect would surely give us biased results. In order to control for this, I run regressions which include variables for Age, Age^2, Age^3, and a list of indicator variables for various age groups. The age groups are divided into 17-24, 25-34, 54-44, 45-54, 55-64, and 65-74, with age group above 74 omitted from the regressions. The results remain robust to these various identifications, showing that the difference in voting cannot be explained by age.

The estimates could suffer from sample selection bias if the decision to vote and the decision to have children are related in some non-obvious way. Therefore, in the regressions of primary interest, I drop all individuals without children under 18 years of age. I do not include those with children over 18 in this subsample because this information is not available for many of the years. Since the primary results of interest involve the differences in voting between those with very young children and those with children in their teenage years, dropping people with children 18 or over does not detract from the analysis.

In the regressions presented in the following sections, observations are dropped due to missing data, most notably the lack of voting validation. The sample size before dropping individuals without children under 18 is 8,854. After dropping these individuals the sample size is reduced to 3,699.

A variable which is often ignored when discussing voting is whether an individual has recently moved. This variable is found to be both large in magnitude and highly significant. Also, it is may be correlated with childrens' ages because parents with children in school may be less willing to move locations. In the following analysis, the variable "Recently Moved" indicates that the subject has moved into their current community within the last year. This variable is most likely associated with an increased cost of voting due to the need to re-register when moving states and also a lack of knowledge concerning nearby polling stations. The decrease in voting could come from another source as well. Those who have

recently moved to a community may not know as many people in the community at the time of the election. Therefore, they may not talk about the election with friends and neighbors. This could decrease one's interest in the election or alternatively, it could decrease the social pressure of voting. Social pressure has been shown to be a powerful motivation for voting (Dellavigna, List, Malmendier and Rao 2013; Gerber, Green, and Larimer 2010). It would be interesting for further research to study whether this lack of social pressure is a factor for the decrease in probability of voting for those who have recently moved.

I estimate that having recently moved decreases the probability of voting by about 15 percent. This is a substantial decrease, though this figure should be treated with some skepticism as "Recently Moved" could be correlated with omitted variables. Still, it is suggestive of a large effect, and is evidence that even small increases in the cost of voting, such as looking up the location of the nearest polling station, can result in a large decrease in voting. It seems plausible to institute an online polling option. This would drastically decrease the costs for many people and given the evidence that even small increases in costs decrease voting significantly, this online option could have an enormous effect on voter turnout.

3 Results of Propensity to Vote

Table 2 shows the results of estimating equation (1). Columns (1)-(3) include the entire population, and not just those with children under 18. As can be seen in columns (1)-(3), having a child under 6 is associated with an about 5 percent decrease in probability of voting, compared to those without children under 18 in the household. Having a child 10 to 13 is estimated as increasing the probability of voting by 3 to 4 percent, and this effect is significant at the 5 percent level in the probit regression and the 10 percent level in both OLS regressions. Therefore, the difference in voter turnout between those with a child under 6 and those with a child 10 to 13 is estimated to be 8 percent. This estimate is both relatively

large in magnitude and highly significant. Still, as stated earlier, we cannot conclude that having children in these age groups causes people to become more or less likely to vote due to possible sample selection bias.

Therefore, the primary results of interest are presented in columns (4)-(6). In these regressions, individuals are dropped if they do not have a child under 18 living in the household. The key finding of this study, that those with young children are less likely to vote, is found to be robust to this change. I estimate that having at least 1 child under 6 decreases the probability of voting around 5 to 7 percent and the estimates are significant at the 1 percent level in all regressions. The estimate of the coefficient on "Child 10 to 13" is still positive, but it is no longer significant.

One probable explanation for the significant negative coefficient on "Child Under 6" is that having young children greatly increases the cost of voting on Election Day. It may be difficult for parents to find someone to watch their children while they vote, or it may be troublesome to wait in long lines with young children, both of which would decrease the probability of voting. But when the children are old enough to attend school, much of this additional cost of voting may disappear. This could be why we observe that parents with children 6 to 9 tend to vote about the same as those with older children. As is shown in Table 2, this group tends to vote about the same as individuals with no children or grown children.

There is another possible explanation for the negative coefficient on "Children Under 6." It could be that these parents have less time to watch the news, or engage in conversations about politics, and are therefore less interested in politics in general and the current race. Therefore, it is not the costs associated with children on Election Day which are affecting these individuals, but rather the costs leading up to Election Day. If it were true that having children under 6 is correlated with political awareness, then we would expect the estimates

Table 2: Relationship Between Child's Age and Voting Among Individuals with Children Under 18

VARIABLES	(1) Vote	(2) Vote	(3) Vote	(4) Vote	(5) Vote	(6) Vote
	Entire Population			Subsample with Children Under 18		
	(OLS)	(OLS)	(Probit)	(OLS)	(OLS)	(Probit)
ChildUnder6	-0.0474***	-0.0461***	-0.0539***	-0.0521***	-0.0479**	-0.0638***
	(0.0150)	(0.0147)	(0.0173)	(0.0187)	(0.0191)	(0.0221)
Child6to9	0.00362	0.00239	0.00669	0.00304	0.00313	0.00462
	(0.0169)	(0.0155)	(0.0196)	(0.0174)	(0.0168)	(0.0217)
Child10to13	0.0293*	0.0265*	0.0344**	0.0240	0.0202	0.0281
	(0.0152)	(0.0159)	(0.0168)	(0.0159)	(0.0176)	(0.0192)
Child14to17	-0.00704	-0.00644	-0.00618			
	(0.0161)	(0.0163)	(0.0189)			
RecentMove	-0.129***	-0.127***	-0.151***	-0.144***	-0.145***	-0.175***
	(0.0175)	(0.0181)	(0.0208)	(0.0244)	(0.0280)	(0.0293)
Age2	0.000243		0.000400	-3.14e-05		-1.01e-05
	(0.000255)		(0.000303)	(0.000553)		(0.000659)
Age3	-2.19e-06		-3.19e-06*	-3.03e-08		-1.36e-08
	(1.53e-06)		(1.80e-06)	(4.08e-06)		(4.77e-06)
Constant	0.165	0.412***		-0.286	0.332***	
	(0.206)	(0.0321)		(0.517)	(0.0594)	
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
State Effects	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes
Age Dummies	No	Yes	No	No	Yes	No
Observations	8,854	8,854	8,854	3,669	3,669	3,667
R-squared	0.186	0.192		0.224	0.234	

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

The data source is the American National Election Studies (ANES) survey. The even numbered years from 1978 to 1990 are included. Every regression includes individual-level controls for Race, Education, Gender, Urbanism, Age, Marital Status, and Family Income. All standard errors are clustered by state.

on "Child Under 6" in Table 2 to be biased. Specifically, say $\hat{\beta}_{ChildUnder6}$ is our estimate of the coefficient on "Child Under 6" in Table 2. If politcal awareness is correlated with "Child Under 6" and "Vote", that is $\rho_{ChildUnder6,u} \neq 0$, then $\hat{\beta}_{ChildUnder6} \xrightarrow{p} \beta_{ChildUnder6} + (\sigma_u/\sigma_{ChildUnder6}) * \rho_{ChildUnder6,u}$. If $\rho_{ChildUnder6,u} < 0$ then our estimates in Table 2 will be biased downward. Therefore, if we include proxy variables for political awareness, we would expect our estimates of the coefficient on "Child Under 6" to decrease in magnitude. To test whether political awareness is a factor, I first estimate regressions of the form:

$$PoliticalAwarenessIndicator_i = \beta_0 + \beta_{ChildUnder6} * ChildUnder6_i + \beta_{Child6to9} * Child6to9_i + \beta_{Child10to13} * Child10to13 + \pi X' + u_i.$$

There are four different political awareness variables used in this study. "Newspaper" is a binary variable which takes on a value of 1 if the individual reads the daily newspaper and 0 otherwise. "Discuss Politics" is a binary variable which takes on a value of 1 if the individual ever discusses politics with friends or family and 0 otherwise. "Read Articles" is a binary variable which takes on a value of 1 if the individual has read any articles about the election in a magazine and 0 otherwise. "TV Campaign" is a binary variable which takes on a value of 1 if the individual has watched any television programs about the election and 0 otherwise. By estimating these regressions, we can see if having young children is correlated with a decrease in political awareness. These regressions are reported in Table 3.

Table 3: Political Awareness Among Individuals with Children Under 18

	(1)	(2)	(3)	(4)
VARIABLES	Newspaper	Discuss Politics	Read Articles	TV Campaign
	(OLS)	(OLS)	(OLS)	(OLS)
ChildUnder6	-0.0192	-0.00473	0.00858	0.000739
	(0.0122)	(0.0127)	(0.0145)	(0.0197)
Child6to9	0.0285***	-0.00381	0.0110	-0.00227
	(0.00872)	(0.00937)	(0.0122)	(0.0111)
Child10to13	0.0168	-0.00493	-0.00501	0.0107
	(0.0104)	(0.0123)	(0.0142)	(0.0162)
Constant	0.167	0.0869	-0.364	1.135***
	(0.404)	(0.271)	(0.330)	(0.415)
Year Effects	Yes	Yes	Yes	Yes
State Effects	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes
Age Dummies	No	No	No	No
Observations	3,489	3,489	3,489	3,489
R-squared	0.606	0.691	0.215	0.377

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

The data source is the American National Election Studies (ANES) survey. The even numbered years from 1978 to 1990 are included. Every regression includes individual-level controls for Race, Education, Gender, Urbanism, Age, Age Groups, Marital Status, and Family Income. Individuals without children under 18 are dropped from analysis. All standard errors are clustered by state.

As can be seen in Table 3, "Child Under 6" is not correlated with any of the proxy variables for political awareness. Therefore, the fact that individuals with young childen vote less cannot be explained by a decrease in political awareness. In Table 4, I estimate

equation (1), this time with the list of political awareness proxies included in the vector of control variables. As can be seen in Table 4, the coefficient on "Child Under 6" does decrease in magnitude, but the change is small and insignificant. Also, activities such as reading the newspaper and discussing politics with friends are shown to be highly correlated with voting behavior, and thus may be good indicators of political awareness. Therefore, a lack of political awareness and interest is most likely not a large driver of the results.

Table 4: Political Awareness and Voting Among Individuals with Children Under 18

	(1)	(2)	(3)	(4)
VARIABLES	Vote	Vote	Vote	Vote
	(OLS)	(OLS)	(Probit)	(Probit)
Newspaper		0.0846***		0.104***
		(0.0251)		(0.0306)
Discuss Politics		0.121***		0.155***
		(0.0272)		(0.0327)
Read Articles		0.0252		0.0389
		(0.0203)		(0.0260)
TV Campaign		0.0217		0.0224
		(0.0235)		(0.0280)
ChildUnder6	-0.0565***	-0.0545***	-0.0696***	-0.0682***
	(0.0197)	(0.0197)	(0.0237)	(0.0235)
Child6to9	0.00144	-0.000744	0.00214	-0.00163
	(0.0170)	(0.0167)	(0.0212)	(0.0211)
Child10to13	0.0225	0.0215	0.0267	0.0252
	(0.0171)	(0.0166)	(0.0207)	(0.0201)
Constant	-0.232	-0.272		
	(0.538)	(0.528)		
Year Effects	Yes	Yes	Yes	Yes
State Effects	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes
Age Dummies	No	No	No	No
Observations	3,489	3,489	3,487	3,487
R-squared	0.231	0.238		

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

The data source is the American National Election Studies (ANES) survey. The even numbered years from 1978 to 1990 are included. Every regression includes individual-level controls for Race, Education, Gender, Urbanism, Age, Age Groups, Marital Status, and Family Income. Individuals without children under 18 are dropped from analysis. All standard errors are clustered by state.

4 How Having Children Affects Various Groups

An important consideration is whether having a young child affects various groups differently. For example, the effect of having a child under 6 may vary for individuals who are currently married and those who are not. The logic being that single parents may have a more difficult time getting someone to watch the children while they vote, while married couples may take turns voting. To account for this possibility, I estimate a regression of the following form: $Vote_i = \beta_0 + \beta_{ChildUnder6} * ChildUnder6_i + \beta_{Married} * Married_i + \beta_{Interaction}(ChildUnder6_i * Married_i) + \pi X^{'} + u_i$

"Married" takes on a value of 1 if the individual is married and 0 otherwise and X is a vector of control variables. In this model, the effect of having a child under 6 for an individual who is married is $\beta_{ChildUnder6} + \beta_{Interaction}$, while for an individual who is divorced it is $\beta_{ChildUnder6}$. If we believe that having a young child is more costly for someone who is not married, we would expect a positive estimate for $\beta_{Interaction}$. In Table 5, I estimate this regression for the entire population in columns (1)-(3) and for the subsample of individuals with children under 18 in columns (4)-(6). In columns (1)-(3), those with children under 6 are compared to those without children or those with grown children. There could be selection bias due to unobserved connections between the decision to vote and the decision to have children, but the results in the columns (1)-(3) are at least suggestive of a large effect, for the coefficient on the interaction term is highly significant. The model predicts that given an individual has a child under 6, a married individual is about 7 percent more likely to vote than someone who is not married. In columns (4)-(6) I drop individuals without children under 18 in the household.

As can be seen in columns (4)-(6), the coefficient on "Child Under 6" is similar in value to the estimates in columns (1)-(3), but the coefficient on the interaction term is no longer significant. Therefore, in this subsample, the effect of having young children on voting does

not differ between married and non-married individuals.

Table 5: The Effect of Children on Voting by Marital Status Among Individuals with Children under 18

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	Vote	Vote	Vote	Vote	Vote	Vote	Vote	Vote
		Entire Population			Subsample with Children Under 18			
	(OLS)	(OLS)	(Probit)	(Probit)	(OLS)	(OLS)	(Probit)	(Probit)
Married*ChildUnder6		0.0698**		0.0758**		0.0398		0.0548
		(0.0277)		(0.0301)		(0.0377)		(0.0447)
ChildUnder6	-0.0474***	-0.102***	-0.0539***	-0.117***	-0.0521***	-0.0814**	-0.0638***	-0.104***
	(0.0150)	(0.0254)	(0.0173)	(0.0313)	(0.0187)	(0.0315)	(0.0221)	(0.0389)
Child6to9	0.00362	0.00439	0.00669	0.00740	0.00304	0.00397	0.00462	0.00582
	(0.0169)	(0.0170)	(0.0196)	(0.0198)	(0.0174)	(0.0178)	(0.0217)	(0.0221)
Child10to13	0.0293*	0.0311**	0.0344**	0.0365**	0.0240	0.0255	0.0281	0.0301
	(0.0152)	(0.0154)	(0.0168)	(0.0172)	(0.0159)	(0.0161)	(0.0192)	(0.0194)
Child14to17	-0.00704	-0.00528	-0.00618	-0.00438				
	(0.0161)	(0.0163)	(0.0189)	(0.0190)				
Constant	0.165	0.171			-0.286	-0.296		
	(0.206)	(0.205)			(0.517)	(0.517)		
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age Dummies	No	No	No	No	No	No	No	No
Observations	8,854	8,854	8,854	8,854	3,669	3,669	3,667	3,667
R-squared	0.186	0.186			0.224	0.224		

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

The data source is the American National Election Studies (ANES) survey. The even numbered years from 1978 to 1990 are included. Every regression includes individual-level controls for Race, Education, Gender, Urbanism, Age, Age Groups, Marital Status, and Family Income. Individuals without children under 18 are dropped from analysis. All standard errors are clustered by state.

Another possibility is that the effect of having a child differs across income levels. It could be that families with high incomes are more likely to have regular babysitters, nannies, or a day care, and so these families may face a lower cost of voting. If this is true, the increase in costs of voting associated with having a child would be larger for low income families. Alternatively, it could be that low income and high income families face the same increase in cost of voting due to having a young child, but that low income families face a higher initial cost of voting. Indeed, Rosenstone (1982) argues that economic adversity depresses political participation. If low income families do face higher costs of voting initially, then an equal change in costs due to having a child will affect the behavior of high income and

low income families differently. For example, say we have two individuals, one high income, and one low income, with the same values of p, B, and D, but different values of C. Let the cost associated with a high income individual be C^h and the cost associated with the low income individual be C^l, and assume $C^h < C^l$. Also, assume both individuals are initially voting. That is, $pB + D > C^h$ and $pB + D > C^l$. Now, if both individuals have a child, there will be an additional cost to voting, let this cost be C^c. For simplicity, ignore the possible changes D and B due to a child. Now, the individuals will vote if $pB + D > C^h + C^c$ or $pB + D > C^l + C^c$. If the cost associated with having a child pushes the high income individual to not vote, then the low income individual will definitely not vote. But if the low income individual no longer votes, we cannot be certain how the high income individual acts. It could be that the high income individual still votes because his initial cost was so low compared to the low income individual. If this occurs frequently then we would expect that having a child affects the behavior of low income individuals more due to differentiated initial costs.

In order to study whether the effect on voting of having a young child differs between income groups, I include an interaction term between "Child Under 6" and "Low Income". "Low Income" denotes an individual who is in the bottom third of the income distribution. In table 6, I run two estimates of this regression, one OLS and one probit. The OLS regression reports an estimate of the coefficient on the interaction term as nearly 8 percent, while the probit model estimates the coefficient as 10 percent, and both of these estimates are significant at the 1 percent level. The coefficient on "Child Under 6" is estimated to be between 3 and 4 percent, but this estimate is no longer significant. This shows that much of the decrease in voting we observe is concentrated in low income groups.

This finding is of importance because it shows that having a child does not affect all groups in the same way. Therefore, the decrease in voting due to the costs of having children could actually affect election outcomes. For example, low income individuals are statistically

Table 6: The Effect of Children on Voting for Low Income Individuals with Children Under 18

VARIABLES	(1) Vote (OLS)	(2) Vote (OLS)	(3) Vote (Probit)	(4) Vote (Probit)
LowIncome*Child Under 6		-0.0759**		-0.0969***
		(0.0294)		(0.0358)
Child Under 6	-0.0521***	-0.0325	-0.0638***	-0.0394
	(0.0187)	(0.0217)	(0.0221)	(0.0257)
Child 6 to 9	0.00304	0.00379	0.00462	0.00603
	(0.0174)	(0.0172)	(0.0217)	(0.0215)
Child 10 to 13	0.0240	0.0252	0.0281	0.0294
	(0.0159)	(0.0163)	(0.0192)	(0.0197)
Constant	-0.286	-0.177		
	(0.517)	(0.523)		
Year Effects	Yes	Yes	Yes	Yes
State Effects	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes
Age Dummies	No	No	No	No
Observations	3,669	3,669	3,667	3,667
R-squared	0.224	0.225		

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

more likely to be Democrat, and also more affected by having young children. Therefore, we might expect that having children decreases the number of votes for Democrat candidates at a higher rate than it does for Republican candidates, assuming that Democrats and Republicans do not differ in their fertility patterns.

To further support the last point, I run another regression including interaction terms between "Low Income" and "Child Under 6" and between "Black" and "Child Under 6". The results of this regression are reported in Table 7.

The coefficients on both interaction terms are negative and significant at the 1 percent level. This provides further evidence for the hypothesis that having a young child affects various groups differently. This could be due to compounding costs which push certain groups towards not voting. This finding should be of interest to policy makers. It is undesirable to have certain groups voting less due to differentiated costs of voting, especially if there are easily implemented policies which could greatly diminish the size of this gap.

Table 7: The Effect of Children on Voting by Income and Race Among Those with Children Under 18

VARIABLES	(1) Vote (OLS)	(2) Vote (OLS)	(3) Vote (Probit)	(4) Vote (Probit)
Black*Child Under 6		-0.0856**		-0.117**
		(0.0386)		(0.0479)
LowIncome*Child Under 6		-0.0618**		-0.0791**
		(0.0292)		(0.0358)
Child Under 6	-0.0521***	-0.0216	-0.0638***	-0.0247
	(0.0187)	(0.0228)	(0.0221)	(0.0270)
Child 6 to 9	0.00304	0.00432	0.00462	0.00653
	(0.0174)	(0.0172)	(0.0217)	(0.0215)
Child 10 to 13	0.0240	0.0268	0.0281	0.0312
	(0.0159)	(0.0162)	(0.0192)	(0.0197)
Constant	-0.286	-0.142		
	(0.517)	(0.535)		
Year Effects	Yes	Yes	Yes	Yes
State Effects	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes
Age Dummies	No	No	No	No
Observations	3,669	3,669	3,667	3,667
R-squared	0.224	0.226		

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

The data source is the American National Election Studies (ANES) survey. The even numbered years from 1978 to 1990 are included. Every regression includes individual-level controls for Race, Education, Gender, Urbanism, Age, Age Groups, Marital Status, and Family Income. Individuals without children under 18 are dropped from analysis. All standard errors are clustered by state.

5 Long Lines at Polling Stations and Young Children

One might also expect the effect of having a young child to depend on the amount of time one waits in line at the polling station. Indeed, this might help explain the significant negative coefficient on the interaction between "Black" and "Child Under 6". Stewart (2012) estimated that African-Americans waited an average of 23 minutes to vote in the 2012 election, while whites waited 12 minutes and Hispanics 19 minutes. There is also great variation in wait times for voting across the nation, and we might expect that a child is more likely to decrease the probability of voting in states with long wait times. Two states with historically long wait times are Florida and Ohio. California, on the other hand, generally has shorter wait times. In Table 8, I include an interaction term between "Florida" and

"Child Under 6", "Ohio" and "Child Under 6", and "California" and "Child Under 6."

Table 8: The Effect of Children on Voting by State Among Individuals with Children Under 18

VARIABLES	(1) Vote (OLS)	(2) Vote (Probit)
Florida*Child Under 6	-0.155***	-0.192***
	(0.0162)	(0.0196)
Ohio*Child Under 6	-0.121***	-0.145***
	(0.0148)	(0.0178)
California*Child Under 6	0.0591**	0.0678**
	(0.0255)	(0.0309)
Child Under 6	-0.0474**	-0.0578**
	(0.0189)	(0.0225)
Child 6 to 9	0.00368	0.00558
	(0.0174)	(0.0218)
Child 10 to 13	0.0245	0.0288
	(0.0160)	(0.0192)
Constant	-0.306	
	(0.517)	
Year Effects	Yes	Yes
State Effect	Yes	Yes
Demographic Controls	Yes	Yes
Age Dummies	No	No
Observations	3,669	3,667
R-squared	0.225	

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

The data source is the American National Election Studies (ANES) survey. The even numbered years from 1978 to 1990 are included. Every regression includes individual-level controls for Race, Education, Gender, Urbanism, Age, Age Groups, Marital Status, and Family Income. Individuals without children under 18 are dropped from analysis. All standard errors are clustered by state.

The coefficients on these interaction terms are surprisingly large. For the OLS regression, the effect of having a child under 6 for someone in Florida is estimated as nearly 18 percent and in the probit regression it is estimated as 21.8 percent. Note that the t-stat associated with the coefficient on the interaction term is above 8 for both regressions, signifying a significance level well below the 1 percent level. The coefficient on the interaction term between "Ohio" and "Child Under 6" is similar. As expected, the coefficient on the interaction term between "California" and "Child Under 6" is positive and significant, signifying that having

a young child does not decrease the probability of voting in California as much as it does in other states with long wait times. Wait time also varies between rural and city polling stations. I run regressions which include interaction terms between living in the city and having a child under 6 and living in a rural area and having a child under 6. Since lines tend to be longer in cities and shorter in rural areas, we expect a positive estimate for the coefficient on the interaction term between "City" and "Child Under 6", and a negative estimate for "Rural" and "Child Under 6." The variable "Suburb" is omitted from this regression.

Table 9: The Effect of Children on Voting between Urban and Rural Population Among Individuals with Children Under 18

VARIABLES	(1) Vote (OLS)	(2) Vote (Probit)
City*Child Under 6	-0.0423	-0.0526
	(0.0414)	(0.0505)
Rural*Child Under 6	0.0395	0.0499
	(0.0379)	(0.0455)
Child Under 6	-0.0554*	-0.0685**
	(0.0293)	(0.0349)
Child 6 to 9	0.00276	0.00415
	(0.0176)	(0.0220)
Child 10 to 13	0.0245	0.0289
	(0.0158)	(0.0190)
Constant	-0.257	
	(0.504)	
Year Effects	Yes	Yes
State Effect	Yes	Yes
Demographic Controls	Yes	Yes
Age Dummies	No	No
Observations	3,669	3,667
R-squared	0.225	

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

The data source is the American National Election Studies (ANES) survey. The even numbered years from 1978 to 1990 are included. Every regression includes individual-level controls for Race, Education, Gender, Urbanism, Age, Age Groups, Marital Status, and Family Income. Individuals without children under 18 are dropped from analysis. All standard errors are clustered by state.

As is shown in Table 9, the estimates on the interaction terms have the expected signs, but they are not significant. Still, we are perhaps more interested in the difference between the two estimates because this gives us the expected difference in the effect of having a child under 6 on voting for someone who lives in a city and someone who lives in a rural area. This differential effect is estimated as 8.2 percent in the OLS regression and 10.3 percent in the probit regression. I run an F-test with the hypothesis that the two coefficients are equal. This hypothesis is rejected at the 1 percent level, indicating that the effect of having a child under 6 on voting is different for people who live in a city and people who live in rural areas. Given these findings, the decrease in voting attributable to young children has a much larger effect than we might have initially postulated. This is in part due to its disproportionate effect on Florida and Ohio, swing states with histories of determining election outcomes. It is also important to note that the data used are primarily from the 1980s, but that this effect could be even more noticeable today. In the 2012 presidential election, the average wait time in Florida was 45 minutes (Stewart III 2012). In 2008, Berinsky et al. estimated that long wait lines dissuaded nearly 2.6 million people from voting. It appears that the effect of having children is correlated with long wait lines; therefore, programs aimed at decreasing average wait times will also increase voting among those with young children.

6 Conclusion

In this paper I provide evidence for decreased voter turnout among parents who have young children. This decrease in voting is associated with the costs of going to the polls, and not on decreased political awareness or interest. Further, I show that having young children does not significantly affect the voting patterns of high income households, but has a great effect on low income households. This could be due to different costs faced by low income and high income individuals in regards to voting. These effects also vary between states. Some states have very long wait lines which increases the costs associated with having a young

child. Two such states are Ohio and Florida. Having a child under 6 depresses voter turnout much more in these states than in a state such as California, which has generally shorter lines. There is also a difference in the effect of having a child between city populations and rural populations. Once again, this is likely due to differential wait times.

These results are relevant to policy-makers interested in improving the current voting system. In an ideal system, everyone would face the same costs of voting and these costs would be relatively low. This is clearly not the case. Those with young children face higher costs of voting, and these costs may be even greater for low income individuals. In order to elect candidates who are representative of the nation's preferences, we should work to not only diminish the costs of voting, but equalize the costs of voting among different groups.

One important step in this process might be to extend early voting accommodations in all 50 states. Early voting (either postal or in person) is currently allowed in 32 states and Washington D.C. Simplifying the process and encouraging voters to use early voting might decrease the number of voters in person and therefore decrease wait times across the nation. Decreasing wait times may diminish the effect children have on their parents' voting decisions.

The effectiveness of such campaigns may still be uncertain, for there has been little research studying whether voters are equally sensitive to increases and decreases in costs of voting. For example, assume the cost of voting facing a group of a 100 people is identical and equal to C_o. Say an increase in the cost of voting raises the cost to C_1, and that this increase causes 50 people out of the 100 to no longer vote. If this group is composed entirely of individuals who recently have had children, then C_1 could be the cost associated with voting as a parent with a young child. Would decreasing the cost back to C_o necessarily result in an increase of 50 voters? The answer is not obvious. Many papers have shown that voting behavior may be habitual (Gerber, Green, and Shachar 2003, Green and Shachar 2000, Verba and Nie 1972).

This habitual component could react differently between increases and decreases in costs of voting. For example, an increase in cost may be very obvious to a voter, but a decrease in cost may not be obvious if it is not advertised in some way to the voting population. For the proposed solutions above, it is important to understand how people react to decreased costs of voting. In this vein, Berinsky, Burns, and Traugott (2001) showed that voting-by-mail increased voter turnout in Oregon not by incentivizing new voters but by keeping prior voters in the electorate.

The effectiveness of such campaigns may still be uncertain, for there has been little research studying whether voters are equally sensitive to increases and decreases in costs of voting. For example, assume the cost of voting facing a group of a 100 people is identical and equal to C_o. Say an increase in the cost of voting raises the cost to C_1, and that this increase causes 50 people out of the 100 to no longer vote. If this group is composed entirely of individuals who recently have had children, then C_1 could be the cost associated with voting as a parent with a young child. Would decreasing the cost back to C_o necessarily result in an increase of 50 voters? The answer is not obvious. Many papers have shown that voting behavior may be habitual (Gerber, Green, and Shachar 2003, Green and Shachar 2000, Verba and Nie 1972). This habitual component could react differently between increases and decreases in costs of voting. For example, an increase in cost may be very obvious to a voter, but a decrease in cost may not be obvious if it is not advertised in some way to the voting population. For the proposed solutions above, it is important to understand how people react to decreased costs of voting. In this vein, Berinsky, Burns, and Traugott (2001) showed that voting-by-mail increased voter turnout in Oregon not by incentivizing new voters but by keeping prior voters in the electorate.

For further research, it would be interesting to determine which policies would effectively increase voting among those with young children. Would this group respond to a simple vote-by-mail initiative? Should there be different lines for those with children and those without?

Whatever the accomodation, it should be aimed at diminishing the cost gap between various groups. It would also be interesting to study whether politicians' campaign strategies are affected by this decrease in voting among families with young children. The returns to campaigning are likely to be lower for this group, and therefore politicians may not have as much incentive to target these families.

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Table 1: Summary Statistics

Variables	Mean	Voter Turnout
Vote	.548	
	(.498)	
Age	35.922	
	(9.791)	
Male	.425	.577
	(.494)	(.494)
Married	.762	.593
	(.426)	(.491)
Suburb	.434	.597
	(.496)	(.490)
Rural	.335	.548
	(.472)	(.498)
City	.231	.458
	(.421)	(.498)
Family Income	3.135	
	(1.075)	
Child Under 6	.440	.490
	(.497)	(.500)
Child 6 to 9	.352	.557
	(.478)	(.497)
Child 10 to 13	.340	.605
	(.474)	(.489)
Child 14 to 17	.321	.618
	(.474)	(.486)
Some High School	.116	.290
	(.321)	(.454)
High School	.387	.490
	(.487)	(.500)
Some College	.254	.629
	(436)	(.483)
College	.196	.747
	(.397)	(.435)

Table 1: Summary Statistics Continued

Variables	Mean	Voter Turnout
White	.760	.595
	(.427)	(.491)
Black	.141	.483
	(.348)	(.369)
Hispanic	.063	.497
	(.243)	(.433)
Asian	.011	.500
	(.104)	(.425)
Other Race	.025	.502
	(.157)	(.484)
Recently Moved	.075	.382
	(.263)	(.487)
Florida	.014	.472
	(.119)	(.504)
Ohio	(.051)	(.594)
	(.220)	(.492)
California	.059	.622
	(.236)	(.486)
Sample Size	3,669	3,669

The data source is the American National Election Studies (ANES) survey. The evened numbered years between 1978 and 1990 are included. This table contains summary statistics only for individuals with children under 18 living in the household. The variable "FamilyIncome" takes on integer values from 1 to 5. A value of 1 indicates that the individual is in the 0 to 16 percentile. 2 is the 17 to 33 percentile. 3 is the 34 to 67 percentile. 4 is the 68 to 95 percentile. 5 is the 96 to 99 percentile. The education variables are binary variables indicating the highest level of education attained by the individual. "RecentMove" takes on a value of 1 if the individual has moved into a new community within the last year, and 0 otherwise. Standard deviations are in parentheses. The "Voter Turnout" column displays the fraction of individuals who voted given that the corresponding binary variable takes on a value of 1. For example, in this subsample, of those with at least one Child Under 6, 49 percent voted.

Table 10: The Effect of Children on Voting by Race, Income, and Degree of Urbanism Among Individuals with Children Under 18

VARIABLES	(1) Vote (OLS)	(2) Vote (OLS)	(3) Vote (Probit)	(4) Vote (Probit)
Black*Child Under 6		-0.0733**		-0.101**
		(0.0338)		(0.0416)
LowIncome*Child Under 6		-0.0608**		-0.0784**
		(0.0294)		(0.0361)
City*Child Under 6		-0.0347		-0.0441
		(0.0311)		(0.0374)
Child Under 6	-0.0521***	-0.0154	-0.0638***	-0.0169
	(0.0187)	(0.0241)	(0.0221)	(0.0286)
Child 6 to 9	0.00304	0.00404	0.00462	0.00616
	(0.0174)	(0.0173)	(0.0217)	(0.0216)
Child 10 to 13	0.0240	0.0271*	0.0281	0.0316
	(0.0159)	(0.0161)	(0.0192)	(0.0195)
Constant	-0.286	-0.129		
	(0.517)	(0.533)		
Year Effects	Yes	Yes	Yes	Yes
State Effects	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes
Age Dummies	No	No	No	No
Observations	3,669	3,669	3,667	3,667
R-squared	0.224	0.226		

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

The data source is the American National Election Studies (ANES) survey. The even numbered years from 1978 to 1990 are included. Every regression includes individual-level controls for Race, Education, Gender, Urbanism, Age, Age Groups, Marital Status, and Family Income. Individuals without children under 18 are dropped from analysis. All standard errors are clustered by state.