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Effects of Delayed Transitions to Adulthood on Youth Voting Participation

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Abstract

Many democracies in developed countries are experiencing declining voting rates largely driven by the non-participation of youth. Focusing on federal elections within Canada, this study examines the socio-demographic differences between old and new voting generations as an explanation for the decline in youth voting participation. The propensity to vote for a Canadian under the age of 35 is modelled as a function of a series of adulthood indicators such as owning a household, marriage and having a child. Using Canadian Elections Studies data conducted between 1984 and 2011, the findings show that adult lifecycle events are largely positive determinants of individual level youth turnout. Thus, delays in the timing of adult life-cycle events negatively effect overall youth participation.

Youth Voting in Decline

Recently, there has been a growing concern about the health of democracy in many industrialized countries. A high voter turnout suggests the legitimacy of the current political systems. However, some of the world's longest standing democracies have experienced turnout rates as low as 50%, which probes the question, are our democracies at risk? What is driving the source of this decline?

In Canada, The turnout rate of new cohorts (who are eligible to vote for the first time in an election) is now only slightly over 30%, while it used to be over 60% (Blais and Loewen, 2011). Despite the well-documented international trend there has been little systemic explanation about the phenomenon, especially during a period in which the individual level characteristics are positively associated with voting, such as education and income, have increased over the past 50 years (Gray, 2011; Lyons and Alexander, 2000). What is certain about the phenomenon is that most of the decline is attributable to decline among younger generations. Young adults have long been identified as the group of the electorate least likely to vote yet most of the determinants for youth voter turnout have not been verified empirically. Consistently, the body of literature points out there is a clear, strong and powerful generation effect; that is, new generations of voters are less prone to vote than past generations at the same stage of their life cycle (Blais, Gidengil, & Nevitte, 2004), Not only are today's youth voting at lower levels than their parents or grandparents did when they were young, there is also a widening age gap in turnout. That is, new cohorts of voters are slower than their older counter part at catching up to the same participation rates as they age (Smets, 2010). From these clear and consistent

trends, an intuitive starting point would be to examine the key differences between young and old members of the electorate as a cause of decline.

One well-documented socio-demographic trend that has been occurring in many developed countries is a delayed transition to adulthood, which is characterized by extended education, an increase in the average age of marriage, purchasing a home, starting a family (Beaujot and Kerr, 2007). Beaujot and Kerr (2007) note that the various adulthood transition indicators have all moved in the same direction over the several decades in Canada and across most industrialized societies. A comparative cohort analysis conducted by Statistics Canada looking at four cohorts of young people aged 18-34 from the 1971, 1981, 1991 and 2001 population censuses provide significant evidence that the transition to adulthood in Canada is taking longer to complete. On average, a 25-year-old in 2001 experienced same number of transitions as a 22-year-old in 1971 and a 30-year-old in 2001 made the same number of transitions as a 25-year-old in 1971 (Statistics Canada, 2007). Also in 1971, three-quarters of 22-year-olds had left school, nearly half were married and one in four had children (Statistics Canada, 2007). By contrast, in 2001, half of 22-year-olds were still in school, only one in five were in a conjugal union and one in eleven had children (Statistics Canada, 2007).

Overall the statistics show that new generations of young adults live with their parents longer, attend school for more years, form a conjugal union and have children at a later age compared to older generations at the same age (Statistics Canada, 2007). Given that these life cycle transition trends move adjacently throughout time with the decline in

youth voting turnout and increasing voting gap, there is a possibility that the delay in adulthood transition may be to partially explain the decline in youth voting over time.

Calculus Model of Voting: Sense of Duty

Now comes the question, how would the acquisition of an adult role influence voter turnout? Marriage, starting a family and owning a home are key adulthood events that are influential in helping citizens develop a sense of duty. Possessing an altruistic sense of responsibility is necessary factor in influencing the decision to vote for an individual. According to the rational choice model of voting first introduced by Downs (1957) and extended by Riker and Ordeshook (1968), the decision to vote can be modelled as a function of expected benefits and cost. The benefit of voting is equivalent to the expected benefit (*B*) a voter would gain from their preferred candidate or party winning the election (rather than one of their opponents) and (*P*) is the probability of casting a decisive vote. (*C*) Represents the opportunity costs associated with voting such as registering, going to the poll, obtaining and analyzing information about candidate (Riker and Ordeshook, 1968). Amalgamating the three terms into one function, $E(R)=(B*P)-C$ represents the expected reward or utility a voter receives from voting. However, the decision to vote is apparently not rational as the chances of any one vote affecting the outcome of a national wide election are zero. The presence of almost any opportunity cost will cause the total expected utility from voting to be negative. For this specific reason, the Riker and Ordeshook (1968) argued that people could not be voting with the purpose of personally benefiting from the outcome of the vote. Thus, the only rational reason for an individual to vote would be to gain nonmaterial benefits through a type of

sense of duty that must be altruistic in nature. Assuming that individuals are rational yet still vote, the calculus of voting model must possess an extra term (*D*), which changes the model to *E(R)=(B*P)-C+D*. If (D) is sufficiently large then the total expected utility may actually be positive, thereby making the decision to vote a rational one.

Each of these adulthood life-cycle events, share one key similarity: developing the sense of duty. Purchasing a home is one of the largest investments an individual makes within their lifetime, which often comes with an obligation in the form of a mortgage. Starting a family marks the first time in one's life in which one has dependents. Caring for others shifts the focus away from individual needs to collective needs, developing a sense of responsibility for others (Denver, 2008; Lane, 1959). It is these adulthood life cycle transitions that foster the growth of an altruistic sense of duty (D) among individuals, which is a necessary condition in influencing the irrational decision to vote. Altogether, *E(R)=(B*P)–C+D* is expected to be less than zero for new cohorts of voters than older generations due to delayed transitions to adulthood. Therefore, the rational response of youth is to abstain from voting until a sense of duty is developed.

Using the calculus model of voting as our theoretical foundation, it is reasonable to expect that delays in the timing of certain life-cycle events should have an adverse effect on youth turnout levels through time. In other words, if the movement of several characteristics of adulthood transition *do not* translate into change in youth turnout patterns then we have a sufficient reason to doubt the validity of the delayed maturation hypothesis.

Canadian Election Study: Data & Trends

The first step in empirically validating the later maturation hypothesis is to assess whether life cycle events have gradually moved to a higher average. The average percent of the population who are married, own a home and have children were plotted by age group before 1993 and after 1993 using Canadian Election Studies Data. Figures 1, 2, & 3, shows that on average, there is indeed a large difference between young and older generations of voters in terms of adulthood maturation at the same point in time in their lifecycle.
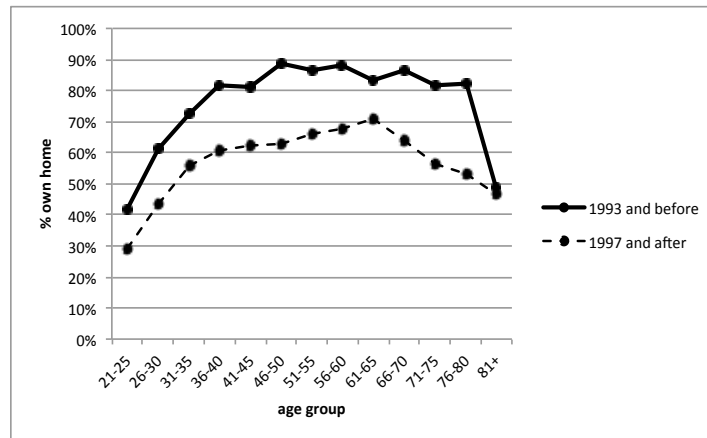

Figure 1. Average % married by age group 1993 and before 1997 and after, CES Data 1984-2011
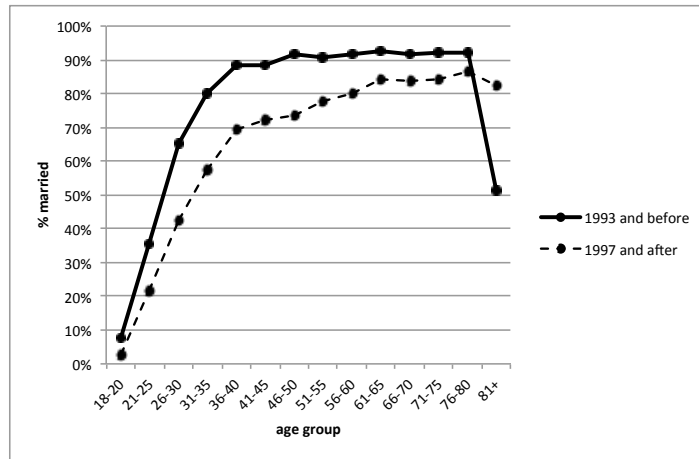
Figure 2. Average % home ownership by age group 1993 and before 1997 and after, CES
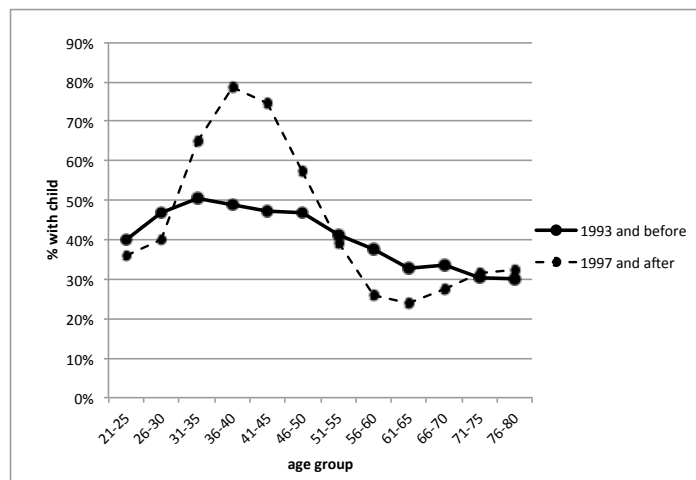
Data 1984-2011

Figure 3. Average % has child by age group 1993 and before 1997 and after, CES Data

1984-2011.

At the ages of 31-35, the percentage point difference between those voting in 1993 and
before who were married versus those voting in 1997 after is 19%. Similarly, for those
who voted in elections 1993 and before, the average percent of the population who

owned a household at the ages of 31-35 was 73% compared to 56% of those who voted in elections 1997 and after. The only unusual result comes from Figure 3, which shows a large percent of the population who voted in 1997 elections and after having children between the ages of 31 to 51. Overall, Figures 1 & 2 provide evidence that new generations are taking longer to experience lifecycle events.

The second step is to quantify the impact the same markers of adulthood transition have on the propensity to vote. If lifecycle indicators have a positive impact on the propensity to vote then we can conclude that and increase in delay in transition to adulthood will contribute to a decrease the voting outcome for new cohorts in comparison to older cohorts. Figure 4 shows a plot of voting turnout by age group before and after 1993 using CES data.
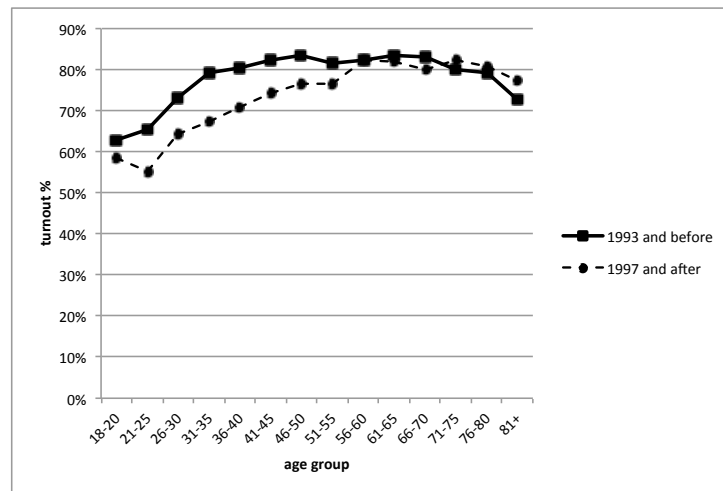

Figure 4. Turnout by age group 1993 and before 1997 and after, CES 2011-1984

Figure 4 clearly shows that life span participation patterns have changed over time. Not only do turnout levels start at a lower level than before, but new cohorts of voters do not reach the same levels of participation until much later. The trends exhibited by the Canadian Election Study data confirm the decline in youth voting and delayed maturation patterns documented by many other sources.

The only other empirical analyses in the literature that examine the delayed maturation hypothesis are by Kat Smets (2010, 2012). In brief, Smets (2010, 2012) has been able to verify the effects of "later adult maturation" on youth voting outcome using Britain Election Studies Data. In her studies, Smets (2010) derives a logit model with individual voting outcome under the age of 35 as a function of age, time period, education, marital status, children, home ownership, residential stability, employment status and average voter turnout over 35 as explanatory variables. The findings from Smets' (2010) study indicate that later maturation is found to explain 9-10% of the turnout difference among young voters before and after 1990 in Great Britain. This study makes use of methodology presented by Smets' in her analysis of the delayed maturation hypothesis in Britain and follows a similar approach in creating an empirical model.

Empirical Model & Variables

Individual Voting Outcome (Age 35 and Under)

Similar to Smets' (2010), the individual level propensity to vote for those under the age of 35 is selected as the dependent variable of interest. The individual voting outcome is a dummy variable that indicates whether or not a respondent voted in the most recent

election of the survey year. There is no objective reason for the selection of this age cut off, other than the fact that 30 may be considered too low a range for the analysis as there are many people who have not experienced all adulthood transitions by the age 30 and 40 may be too high of an age to be considered as young (Smets' 2010). Due to the dichotomous nature of the independent variable, a logit regression is applied to the following empirical model:

$$
\begin{aligned}
INDIVIDUAL\ &VOTING\ OUTCOME_{\leq 35\ years\ old} \\
&= \beta_0 + \beta_1 AGE + \beta_2 POST1993 + \beta_3 HIGHSCHOOL\ COMPLETION + \beta_4 MARRIED \\
&+ \beta_5 CHILD + \beta_6 OWN\ HOUSEHOLD + \beta_7 WORKING + \beta_8 HOUSEHOLD\ INCOME \\
&+ \beta_9 AVERAGE\ TURNOUT_{>35} + \varepsilon
\end{aligned}
$$

Age

Age has been long regarded as an important determinant of voting. The older one is, the more likely they are to vote. AGE is a numeric variable that ranges from 18 years old to 101. AGE is included in the model to account for impact of increases of age on the propensity to vote. The variable is also important because it allows us to separate the characteristics between the young and old population in our analysis.

Period Dummy

The average population turnout over the nine election periods (2011-1984) used in this study is 66%, but it is 73.4% for elections held in 1993 and before, and 62.3% for elections held after 1993 (Elections Canada, 2015). Calculating the period differences, the change in average turnout before and after 1993 was 11 percentage points. The POST1993 variable is included in the model instead of 9 individual period dummy variables, to account for period effects exhibited before and after the 1993-year mark.

High School Completion

The vast host of empirical studies that reference education as an important determinant of voting justifies its inclusion in this model. The variable HIGHSCHOOL COMPLETION takes into consideration the effects of completing education on an individuals voting outcome. HIGHSCHOOL COMPLETION is a dummy variable generated from survey responses. If the respondent completed high school, they were assigned a 1 and a 0 otherwise.

Adulthood Indicators

Since we want to measure the sense of duty adulthood life cycle indicators have on the propensity to vote, the creation of the adulthood indicator variables are mostly straightforward. MARRIED is constructed on the basis of those who are currently either married, cohabiting (living with a partner) or previously been married and now are separated, divorced, or widowed. As mentioned, the theory behind the hypothesis states that it is the sense of duty developed from these lifecycle events that encourages the decision to vote. As a result, the cut-offs for marriage were determined by whether or not the individual decided to make a long-term commitment to a partner. The inclusion of living with a partner is a bit fuzzy. One might object that the inclusion of cohabitation in the marriage variable, as living with a partner is not the same as marriage. However, living with a partner helps develop the same set of values as marriage does; an overall sense of responsibility to another person. Therefore, cohabitation is treated the same as marriage in this model. OWN HOUSEHOLD is a dummy variable, created by assigning a 1 to those who owned home and a 0 to those rented. The CHILD variable was

constructed from two questions in the Canadian Election Study Surveys that asked whether or not the respondent had a child in school and if there were any children in the household under the age of 18. The respondent was given a 1 if they had a child in school or under the age of 18, and a 0 otherwise.

Employment

Working is not treated as an adulthood indicator in this study. The rational for this decision is that working does not necessarily signify the development of an altruistic sense of responsibility. It is difficult to distinguish who is working for their own discretionary consumption benefits or for a greater purpose of raising a family. However, WORKING is still included in the model as a control variable, allowing us to examine the impact of being in the workforce on the propensity to vote. The employment variable is a dummy variable that is generated by assigning a 1 to the respondents who indicated that they were working for income, self-employed, volunteering or caregiving. Those who responded as unemployed were still assigned a 1, as it is difficult to tell whether or not they were actively seeking jobs, which would imply that they are in the workforce. Consequently, it was assumed that those who were not part of the workforce were students and therefore assigned a 0. The employment variable can alternatively be interpreted as a variable that measures the impact of not being in education.

Household Income

Household income is generated as a numeric variable that ranges from 0 to 995 from survey data. Generally, personal income would be ideal for use in this study. However, due to survey design limitations, only household income categories could be obtained.

Average Turnout Over 35

The AVERAGE TURNOUT>35 variable is a constant in each voting each that measures the average level of turnout of the older population over 35 years of age. This variable is included in Smets' (2010) models to account for the differences between young and old voters. Including the variable in the model will indicate whether youth turnout patterns will largely follow the turnout patterns of old voters. If significant, the variable shows that turnout levels of different generations move in conjunction with each other and that the youth turnout levels are partly a function of other explanations that affect the electorate at large. The variable is constructed from the voting outcomes of the CES data set and not adjusted for overall population weight due to missing data. It should be noted that the inability to adjust the average turnout over 35 to the population might produce inaccurate results.

Data used for this study is from the Canadian Election Studies (CES) data set, which contains post-election individual level data across 10 provinces of Canada, conducted through telephone surveys. The data collected is intended to represent the overall population of Canadian citizens over the age of 18 who speak one of Canada's official languages. Although the survey data was collected with this goal in mind, it is important to note that there may be some biases in the data, as people who are more interested in politics, voting and elections will be more inclined to answer the survey. In addition, because the younger subset of the population has a lower rate of participation – following the interest bias – the number of responses from this age group is generally lower than the

rest of the population. As a result, the younger population may be under represented which increases the risk of inaccuracy.

Altogether nine years of data from the election years of 2011, 2008, 2006, 2004, 2000, 1997, 1993, 1988 and 1984 were pooled together into one cross sectional data set. The voting years after 1984 (1980-1965) were omitted due to large amounts of missing data. Pooling these cross sectional data sets together, we have a total of 12 variables. Table 1 below provides a summary of statistics for the variables used in the study.

Variable	Type	Observations	Mean	Std. Dev.	Min	Max
VOTE YEAR	Numeric	26516	1998.51	9.253	1984	2011
VOTE	Dummy	22203	0.862	0.345	0	1
AGE	Numeric	22483	46.903	17.171	18	101
POST 1993	Dummy	26516	0.648	0.476	0	1
PROVINCE	Numeric	26516	5.652	2.767	0	10
HIGHSCHOOL COMPLETION	Dummy	26004	0.797	0.402	0	1
MARRIED	Dummy	24594	0.744	0.436	0	1
CHILDREN	Dummy	26516	0.428	0.494	0	1
OWN HOUSEHOLD	Dummy	9567	0.77	0.4207	0	1
WORKING	Dummy	25992	0.953	0.212	0	1
HOUSEHOLD INCOME	Numeric	18646	47.76	49.718	0	997
AVERAGE TURNOUT >35	Continuous	22865	0.856	0.866	0.68	0.922

Table 1. Summary of Statistics, CES 2011-1984

The problem with the data set is that not every observation has a complete set of variables due to changes in survey design year to year. Tables 2 & 3 below outline the missing variables for each voting year for the sample population and subset of population 35 and under.

	2011	2008	2006	2004	2000	1997	1993	1988	1984	TOTAL
AGE	4221	3192	1560	664	M	3690	2324	3534	3298	22483
HIGH SCHOOL COMPLETION	4308	3210	1560	664	3617	3688	2332	3513	3112	26004
MARRIED	3353	2432	1560	664	3627	3713	2332	3536	3377	24594
CHILDREN	4308	3257	1560	664	3651	3751	2340	3608	3377	26516
OWN HOUSEHOLD	1527	2439	1560	664	M	M	M	M	3377	9567
WORKING	4268	3193	1560	664	3396	3691	2329	3526	3365	25992
TOTAL	21985	17723	9360	3984	14291	18533	11657	17717	19906	135156

Table 2. Sample population missing data and observations of variables by vote year, CES

2011-1984

	2011	2008	2006	2004	2000	1997	1993	1988	1984	TOTAL
AGE	642	725	318	211	M	1197	887	1534	1287	6801
HIGH SCHOOL COMPLETION	642	723	318	211	M	1190	886	1525	1262	6757
MARRIED	452	511	318	211	M	1194	885	1528	1287	6386
CHILDREN	642	725	318	211	M	1197	887	1534	1287	6801
OWN HOUSEHOLD	116	511	318	211	M	M	M	M	1287	2443
WORKING	636	711	318	211	M	1184	885	1517	1281	6743
TOTAL	3130	3906	1908	1266	0	5962	4430	7638	7691	35931

Table 3. Subset of population aged 35 and under missing data and observations of

variables by vote year, CES 2011-1984

It can be seen that the largest amount of missing data comes from the OWN HOUSEHOLD variable. A high percentage of missing data raises computational challenges especially when performing analyses on the subset of the population aged 35 and under. Due to the large amount of missing data for the OWN HOUSEHOLD variable, a multiple imputation method is used to impute missing data using observations from the VOTE, HIGHSCHOOL COMPLETION, AGE, GENDER, MARRIED variables within the data set. Overall 6,861 values were imputed for home ownership, producing a total of 16,428 observations in comparison to the original data set, which only contained a total of 9,567 observations. Although the observations from the imputed data set are artificially generated from existing observations of other variables, the increase in observations help overcome multi-collinearity issues, allowing for greater

flexibility. In the empirical analysis, model 1 is fitted using the original data and model 2 is fitted using the imputed data.

Empirical Results

Fitting a logit regression for individual voting outcome under the age of 35 on the explanatory variables, we receive the following results:

	Model 1 b/(se)	Model 2 b/(se)
AGE	0.063***	0.073***
	(0.006)	(0.007)
POST 1993	-0.458***	-0.578***
	(0.172)	(0.189)
HIGHSCHOOL COMPLETION	0.834***	0.777***
	(0.174)	(0.149)
MARRIED	0.245***	0.151
	(0.072)	(0.108)
CHILDREN	-0.384***	-0.254**
	(0.144)	(0.126)
OWN HOUSEHOLD	0.488***	0.475***
	(0.102)	(0.098)
WORKING	-0.502***	-0.585***
	(0.162)	(0.099)
HOUSEHOLD INCOME	-0.001	-0.003
	(0.002)	(0.002)
AVERAGE TURNOUT >35	0.750	0.906
	(3.702)	0.189
CONSTANT	-1.292	-1.669
	(3.336)	(1.207)
Log-likelihood	-900.83	-
Pseudo R	0.053	-
N	1878	4313

note: b coefficients from logit analyses with robust s.e.'s clustered by election in parentheses; * p<0.10, ** p<0.05, *** p<0.01

Figure 5. Turnout by life cycle indicators for young voters aged 35 or less, CES 2011-1984

The results from the empirical analysis in both models indicate that there is a positive relationship between age, high school completion, marriage, home ownership and the average turnout over 35 variable with the individual level propensity to vote for those under the age of 35. Conversely, there is a negative relationship between the POST1993 period dummy, having children, working and household income.

The positive coefficients of marriage and household ownership are in line with the hypothesis. However, the negative relationship found between voting turnout and having a child variable departs from the hypothesis presented. The result is not surprising as being a young parent in the early years of a child's birth is often taxing in terms of time and money. Having a child in the early years after birth increases the costs associated with voting and will cause decline in propensity to vote in the short term. However, there is still the possibility that having a child increases participation in the long term when the child becomes more independent.

The results also show that household income is negatively associated with the propensity to vote. This is a puzzling result considering that many studies cite the fact that household income is a positive correlate of voting. The fact that household income is not economically significant and fails to reach statistical significance is also anticipated given the nature of the data, as we cannot distinguish how much of the household income the income belongs to the individual (Smets, 2010). By this notion, household income is perhaps more indicative of the economic class and status of young respondents in this study, overall signalling that economic class is not a correlate with the propensity to vote.

While Smets (2010) found the average turnout variable to be highly significant in her study, the average turnout variable is does not seem to be significant in this model, indicating turnout levels of different generations do not move in conjunction with each other. An explanation for this result may be due to the inability to adjust the variable for population weights.

The variables AGE, POST1993, HIGHSCHOOL COMPLETION, MARRIED, CHILD, OWN HOUSEHOLD and WORKING are highly significant in the first model (p value <0.01) with the original data. The largest difference between the model with the original data and the imputed data is the change in significance in the married coefficient. In the imputed model, the coefficient is not statistically significant at the 90% level but is still significant at the 85% level with a p value of 0.144. The high percentage of missing data in model 1 may lead to inaccurate reporting of the significance of marriage. Model 2, allows for more observation to be included in the analysis however the standard error also increases, suggesting that the results from the regular model are more efficient. Both models have their strengths and weaknesses, and the significance of the variable is likely to fall in between the 85% and 1% confidence levels.

Predicted probabilities were estimated in order to understand the differential impacts of adulthood transition indicators on overall turnout. Altogether using the results from model 2, the imputed model, those who are married under the age of 35 are 4% more likely to vote than those who are not married. Those who own a household are 7% more

likely to vote than those who do not own a household, and finally those who do not have a child are 5% more likely to vote than those who have a child.

Limitations

The findings from this study are able to explanatory value in terms of understanding the decline in youth voting. The most recent 2015 Canadian election, exhibited an unusually high turnout of 67% for those aged 18-24. The jump in youth participation from the most recent election suggests that the delayed maturation is not the only determinant of youth voting turnout and that there are a wide host of possibilities at play. The model proposed in this study would benefit from the addition of other explanatory variables such as union membership, religious affiliation, and mobility. In addition, this study of the later maturation hypothesis is inherently limited by the availability of data. In order to produce more powerful results, greater longitudinal data survey data aimed at young citizens needs to be gathered. Generally, panel data would be ideal to track the impact of life-cycle changes on turnout and distinguish different age effects (Hooghe, 2004, p. 336; Glenn, 2005).

Conclusion

Overall, the findings from this thesis provide support for the delayed maturation hypothesis is Canada. By quantifying the impact of adulthood indicators on the propensity to vote, we are able to ascertain that over time movements of life cycle indicators to a higher average will have a negative effect on the turnout levels of young adults. As a result, the delayed adulthood socio-demographic trend should be able to

partially explain the declining turnout exhibited by the young population in developed

countries and should be included in future empirical models studying youth voting.

Data Sets

- Canadian Election Study 1984
  Source: Canadian Opinion Research Archive;
  http://www.queensu.ca/cora/ces.html

- Canadian Election Study 1988
  Source: Canadian Opinion Research Archive;
  http://www.queensu.ca/cora/ces.html

- Canadian Election Study 1993
  Source: Canadian Opinion Research Archive;
  http://www.queensu.ca/cora/ces.html

- Canadian Election Study 1997
  Source: Canadian Opinion Research Archive;
  http://www.queensu.ca/cora/ces.html

- Canadian Election Study 2000
  Source: Canadian Opinion Research Archive;
  http://www.queensu.ca/cora/ces.html

- Canadian Election Study 2004
  Source: Canadian Opinion Research Archive;
  http://www.queensu.ca/cora/ces.html

- Canadian Election Study 2006
  Source: Canadian Opinion Research Archive;
  http://www.queensu.ca/cora/ces.html

- Canadian Election Study 2008
  Source: Canadian Opinion Research Archive;
  http://www.queensu.ca/cora/ces.html

- Canadian Election Study 2011
  Source: Canadian Opinion Research Archive;
  http://www.queensu.ca/cora/ces.html

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