

Liam Deaton

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Inglehart in Times of Insecurity:

The Role of Post-Materialist Values in the 2021 Canadian Election

Introduction

This study aims to investigate the influence of personal economic well-being on the priorities of Canadian voters during the 2021 Canadian Election. In particular, this study looks to evaluate the applicability of the much debated post-materialism thesis in a modern-day Canadian electoral context. In the 2021 Canadian Election Survey (CES), individuals responded to an open ended question about the issue they cared about most in the upcoming election. Through categorizing these responses into Inglehart's postmaterialism framework, this paper finds a negative correlation between income and post-materialist values, even when controlling for other respondent characteristics. This trend is true regardless of if you include responses that are concerned primarily with the Covid-19 pandemic. This finding runs counter to the post-materialism thesis, and calls into question some of the underlying mechanisms present in the theory, at least in this particular context. These findings are in congruence with other experimental contemporary research.

Background

Inglehart's postmaterialism thesis centers around the hypothesis that value priorities in Western publics have been shifting away from priorities of "physical sustenance and safety" and towards priorities of "belonging, self-expression, and quality of life". Inglehart proposes two basic hypotheses around this theory of value change. Firstly, he explores the scarcity hypothesis, which posits that individuals prioritize "those things that are in relatively short supply".¹ This hypothesis can be reframed as a sort of diminishing returns to wealth; as an individual's wealth increases, the marginal utility of other values begin to exceed the marginal utility of increased wealth, and thus people begin to value these other priorities. A corollary to this would be Maslow's Hierarchy of needs, in which humans pursue higher, less material values as they fulfill personal needs of security. The Socialization Hypothesis, Inglehart's second hypothesis, complements the first hypothesis, postulating that individuals' value priorities do not immediately adjust to circumstances, but that instead they are formed during early years, and persist as one ages. Both of these hypotheses can be considered complementary to one another.²

There have been significant refinements and challenges to Inglehart's theory. Clarke et al. finds that much of the research that confirms postmaterialism shifts using Euro-Barometer data since the early 1980's is a product of survey issues.³ Nový et al. finds that individual-level socioeconomic status, as well as national development factors both are extremely associated with individual level material values.⁴

The COVID-19 pandemic acts as an interesting test of this theory. The pandemic challenged feelings of both economic security and health insecurity for Canadians.^{5 6} This

¹ Inglehart, "Post-Materialism in an Environment of Insecurity."

² Inglehart.

³ Clarke et al., "The Effect of Economic Priorities on the Measurement of Value Change."

⁴ Nový, Smith, and Katrňák, "Inglehart's Scarcity Hypothesis Revisited."

⁵ Government of Canada, "Compliance with Precautions to Reduce the Spread of COVID-19 in Canada."

⁶ Government of Canada, "The COVID-19 Pandemic and Gross Domestic Product per Capita Growth in Canada."

heightened insecurity in theory should push people towards more materialist values. While the many questions the pandemic raises are not fully tested in this paper, these questions are highly relevant to the discussion in the findings.

Hypotheses

We expect that people who report higher incomes are less likely to report a material value as their most important issue in the election. Additionally, we expect that including those respondents who are most concerned about COVID-19 will exacerbate this effect.

Data and Measurement

The 2021 Canadian election survey contains data on reported income, education, most pressing issues, and a report for which party they believe best addresses these pressing issues. These questions are asked of respondents prior to voting day. The exact wordings of the questions are as follows:

“cps21_income_number: What was your total household income, before taxes, for the year 2020? Be sure to include income from all sources, to the nearest thousand dollars.”

“cps21_imp_iss: What is the most important issue to you personally in this federal election?”

“cps21_imp_iss_party Which party is best at addressing this issue?”

This question is followed by a list of options for each party.

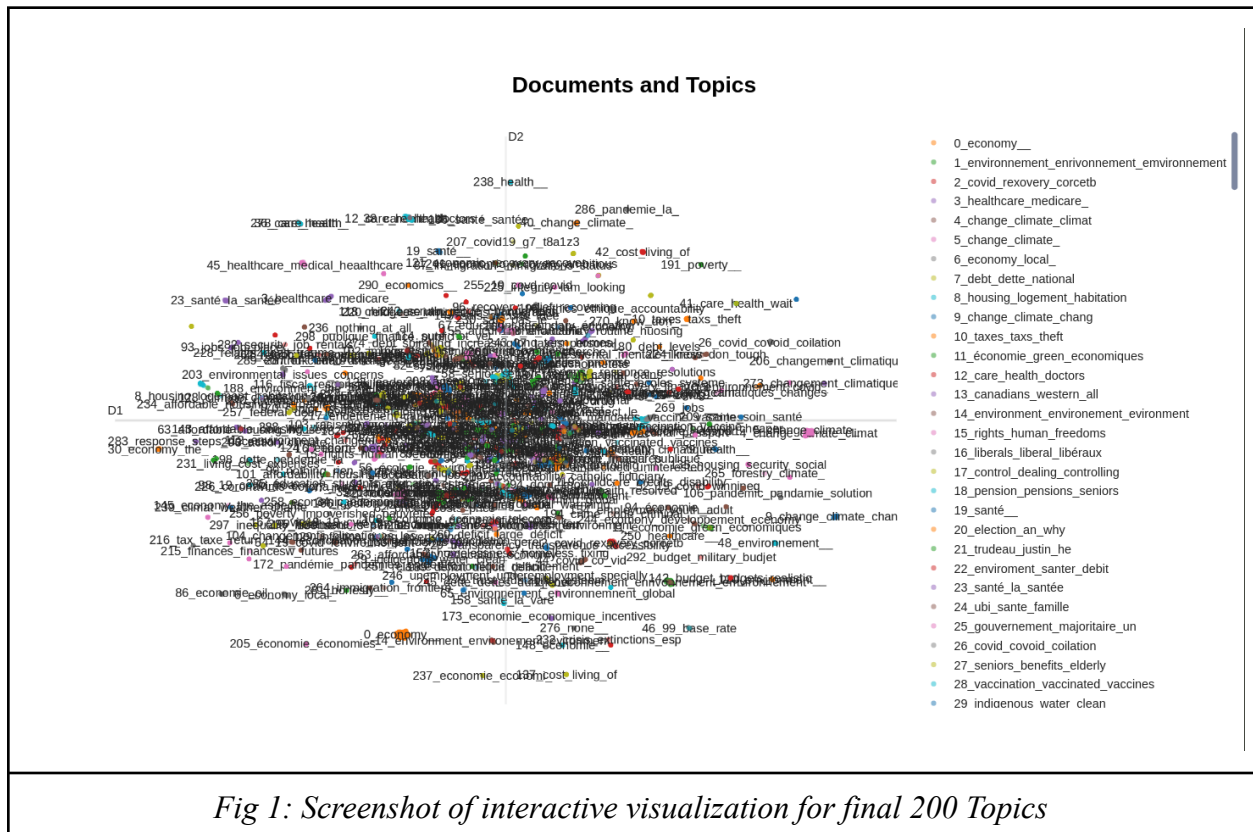
Respondents were able to fill the important issue with any sort of text response they chose.⁷ In order to measure materialist vs non-materialist values, a method was needed to sort through all the text responses and give them a classification, either materialist or non-materialist. Manual classification of each response was infeasible. Thus, the BERTopic library was used in order to group the responses into 200 groups based on topic, that could then be classified by hand. The topics were embedded using the multilingual sentence transformer *paraphrase-multilingual-MiniLM-L12-v2*. This transformer is designed to semantically embed in multiple languages, which allows for similar meanings in both French and English to have congruent embeddings. UMAP is used to reduce dimensionality for ease of computation, which is standard for BERTopic. A choice was made to use the K-means clustering algorithm, which has the advantage of categorizing all points, as well as allowing for a predetermined number of categories. Having been clustered and classified, these topics were given names using tf-idf, which essentially picks the most topic-specific words. Many answers in the survey use the word “Canada”, “Canadians” or “Canadiens” without sharing meaningful similarities. To reduce the effect of these words on topic representations, we customized the tf-idf representation by de-seeding the relevance of those words.⁸

To combat the potential K-means has of creating badly calibrated or noisy categories, the number of clusters was refined by hand. This process was done by starting at 400 clusters, then by inspection, alternating between reducing the number of topics if there were redundant categories, or increasing the number if differing responses were being classified together. Ultimately, 200 was determined to be the optimal number of categories for efficiency without

⁷ Stephenson et al., “2021 Canadian Election Study (CES).”

⁸ Grootendorst, “BERTopic: Neural Topic Modeling with a Class-Based TF-IDF Procedure.”

creating large, overly grouped topics. Initiating 300 categories points, and then reducing these to 200 categories was found to achieve the best results. A visualization of all responses, classified into 200 color-coded topics can be seen in figure 1. While not extremely informative, figure 1 provides some intuition on the classification process, and similar interactive visualizations were used when tuning the number of categories.



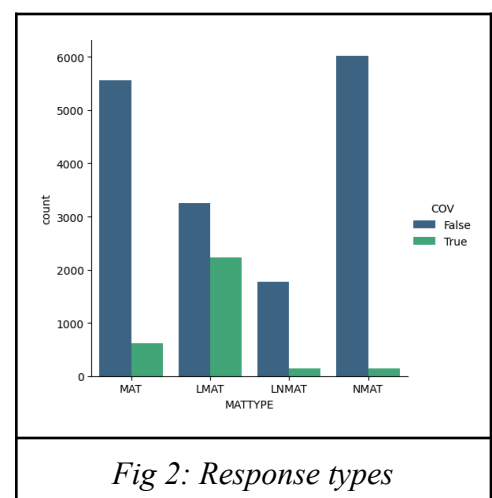
In figure 1 it can be seen that there are a substantive number of redundant categories.

This is a benefit to this project because it means that it is less likely that similar but meaningfully different categories have been put together. For example, “green economy” was classified differently than “economy” which is important as these similar topics have very different meanings insofar as they evaluate materialist versus postmaterialist values.

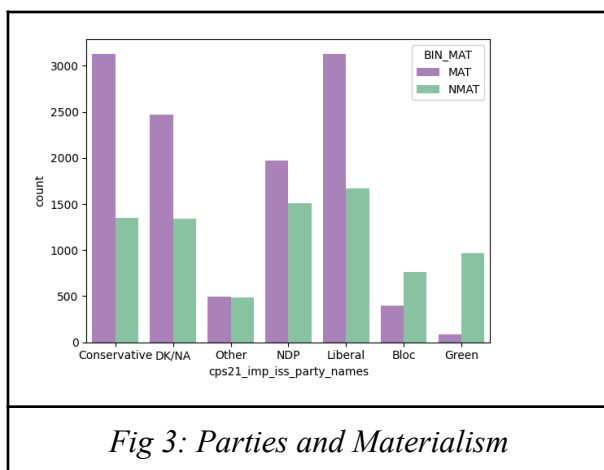
These two hundred topics were then classified by hand into materialist and postmaterialist. This process was done by reading the topic representation provided by tf-idf, and then additionally sampling some of the responses in each category, to determine if the category best fit into material or post-materialist ideals. Material topics are those that pertain to security and material gain, and post-materialist ideals are more ideological.

There are a number of hurdles to effective classification of issues. For some topics, respondent positionality is important as to whether their response qualifies as materialist or non-materialist: for example, abortion, or gun control. These issues affect the material security of some and for others they are important due to non-material ideological beliefs. Ideally, through further interview with respondents, a researcher would be able to determine whether these responses were based on material or non-materialist ideas. In absence of this, responses such as these were classified tentatively in a “leaning” category, either “leaning materialist” or “leaning non-materialist”. Additionally, responses regarding health care systems or spending were classified as “leaning materialist”, while responses that simply talked about health were categorized as “leaning non-materialist”. These categories are not cardinal or ordinal reasons, but instead exist to test the robustness of research findings against potential classification errors.

Figure 2 shows the number of responses that were classified as material (MAT) versus non-material (NMAT), with additional designation L to indicate if it was classified as leaning (LMAT, LNMAT). An additional indicator was added to determine whether responses were



COVID-related. Most COVID responses were categorized as leaning materialist, however some were non-materialist, such as “vaccine freedom” or “vaccine equity”, which would both be classified as leaning non-materialist responses on the basis that they are mainly ideological. Immediately, we can see that most responses were able to be categorized as either clearly materialist or clearly non-materialist.

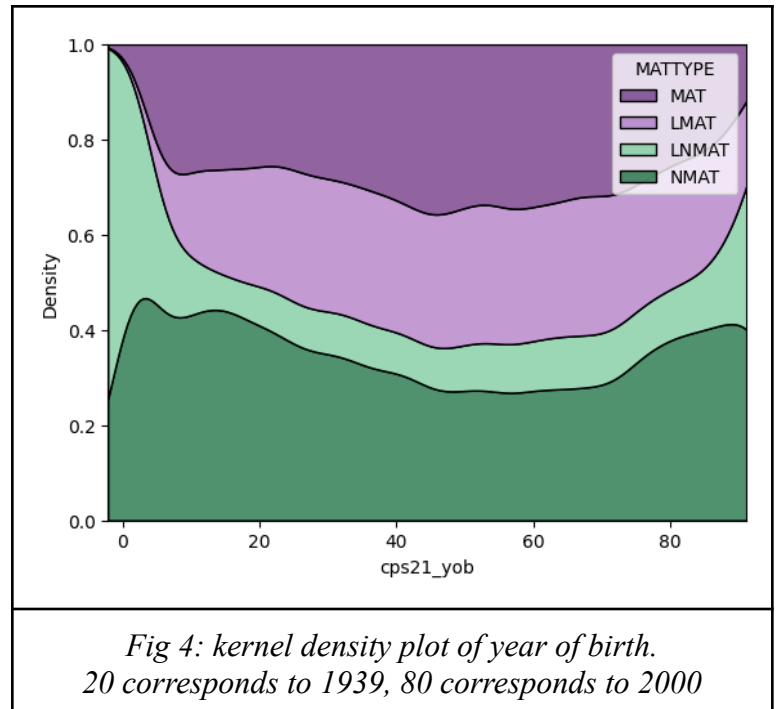


Respondents were also asked which party was best able to address their most pressing issue. Figure 3 shows this association: given that a respondent chose a certain party, was their pressing issue a materialist or non-materialist one. In line with expectations, parties such as the Bloc or the Green parties have much higher ratios of non-materialistic values to

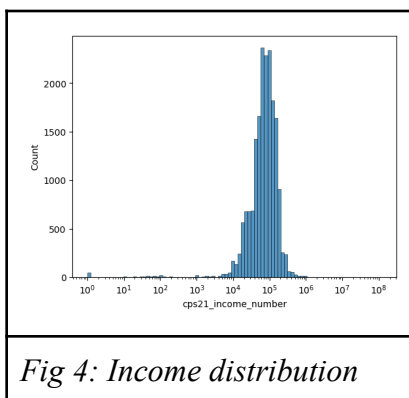
materialist values. This is highly consistent with other research about the emergence of green parties and post-materialistic values around the world.⁹

⁹ Tranter and Western, “The Influence of Green Parties on Postmaterialist Values.”

Also in line with the findings of previous researchers, materialist responses are associated with age. Figure 4 shows a kernel density plot of year of birth and likelihood of material or non-material responses. Older individuals are on the left, and younger individuals on the right. Most respondents were born after 1920, and respondents were disqualified if they were born after 2003. The numbers on the axis are



year of birth codes assigned by Stats Canada. Thus the area between 20 and 80 on the x-axis is the most representative of the surveyed population. After 1959 (yob = 40), we can see that generally younger respondents are more likely to respond with non-material issues than their older peers. However, we do see an effect where the extremely elderly appear more likely to pick non-materialist issues than those slightly younger than them. This may be due to generational effects experienced by “baby-boomers” born in the late 40’s and 50’s.



Log yearly income distribution can be seen in Figure 4. Outliers beyond one billion dollars per year were dropped.

Education is also an important confounding variable between income and beliefs because education can be associated with both. In the 2021 Canadian election survey, people were given multiple categories for their level of highest education. For our regressions,

education was treated as a categorical variable, and material topics were transformed into a binary variable of “1” if values were material or leaning material, and “0” otherwise.

Regressions and Analysis

For each regression analysis, a basic regression was done, followed by controlling for age, and then controlling for our educational categorical controls.

Table 1 shows a regression using all categorized responses. We find that, controlling for age and education, respondents with incomes that are 1% higher are on average are 1.1 percentage points more likely to report a materialist value as their most important issue. This effect is significant at the 1% level.

Table 1: Regression of Material Topics on Income, Age, and Education

	<i>Dependent variable: MATIO</i>		
	(1)	(2)	(3)
LogIncome	0.007** (0.003)	0.007** (0.003)	0.011*** (0.003)
cps21yob		0.000 (0.000)	0.000 (0.000)
Education Controls	No	No	Yes
Observations	18640	18640	18640
R^2	0.000	0.000	0.006
Adjusted R^2	0.000	0.000	0.005
Residual Std. Error	0.491 (df=18638)	0.491 (df=18637)	0.490 (df=18626)
F Statistic	4.718** (df=1; 18638)	2.494* (df=2; 18637)	7.986*** (df=13; 18626)

Note:

*p<0.1; **p<0.05; ***p<0.01

Introducing age and education controls actually increased the magnitude of this effect, compared with the simple regression that found a much smaller effect. This is the opposite effect predicted by the scarcity hypothesis, and is also very difficult to explain using the socialization hypothesis. It also acts against other research.

Some obvious criticisms exist. For example, what about the COVID-19 pandemic?

Perhaps COVID issues, which were particularly important in this election, distracted from the overall underlying trend of post-materialism. We ran the same three regressions without responses that referred to COVID, seen in *Table 2*.

Table 2: Regression of Material Topics on Income, Age, and Education, without COVID concerns

	<i>Dependent variable: MATIO</i>		
	(1)	(2)	(3)
LogIncome	0.004 (0.003)	0.004 (0.003)	0.009*** (0.004)
cps21yob		-0.000 (0.000)	0.000 (0.000)
Education Controls	No	No	Yes
Observations	15694	15694	15694
R^2	0.000	0.000	0.008
Adjusted R^2	0.000	-0.000	0.007
Residual Std. Error	0.499 (df=15692)	0.499 (df=15691)	0.497 (df=15680)
F Statistic	1.349 (df=1; 15692)	0.675 (df=2; 15691)	9.479*** (df=13; 15680)

Note:

*p<0.1; **p<0.05; ***p<0.01

We can see that the income effect is reduced when discounting COVID concerns.

However, the association of income on materialist responses when controlling for age and education is still positive, and statistically significant.

This finding is also robust against potential issues with our classification scheme. When we ignore the responses in which positionality could be important in determining whether the response is materialist or post-materialist, we continue to see a strong correlation between income and materialist voting priorities. We in fact see an even stronger effect, as seen in *Table*

Table 3: Regression of Material Topics on Income, Age, and Education, without Leaning Cases

	<i>Dependent variable: MATIO</i>		
	(1)	(2)	(3)
LogIncome	0.013*** (0.004)	0.013*** (0.004)	0.018*** (0.004)
cps21yob		0.001** (0.000)	0.001*** (0.000)
Education Controls	No	No	Yes
Observations	11706	11706	11706
R^2	0.001	0.001	0.010
Adjusted R^2	0.001	0.001	0.009
Residual Std. Error	0.500 (df=11704)	0.500 (df=11703)	0.498 (df=11693)
F Statistic	11.403*** (df=1; 11704)	8.264*** (df=2; 11703)	9.371*** (df=12; 11693)

Note:

*p<0.1; **p<0.05; ***p<0.01

3. An increase in income of 1% is associated with a 1.8 percentage point increase in the probability of having an obviously materialist election priority, holding age and education constant.

These findings run extremely contrary to the post-materialism thesis. Under the scarcity hypothesis of the post-materialism thesis, we would expect the opposite association. Potential refinements to this theory might better fit the data. However, this research is unable to find any association between economic security, and a shift away from materialist values with respect to the 2021 Canadian Election.

Limitations

While significant efforts have been made to show that these findings are robust against both COVID and classification errors, there are a few remaining considerations. Firstly, it is possible that baseline post-materialist respondents were on average higher earners, as expected in the post-materialism thesis, but these respondents were disproportionately more likely to switch to picking COVID as their main concern when the pandemic occurred. This shift would be

unobservable and lead to the results seen here. This would affect the external validity of this research to other Canadian elections, and to the post-materialism thesis as it applies to Canada as a macro trend.

Secondly, it is possible that people do not vote based on their life priorities. Perhaps the post-materialist hypothesis still holds in Canada, but when people pick (or report) priorities during election times, they pick materialist concerns when voting. In this scenario, these findings are correct but do not reliably tell us the true fundamental priorities held by respondents in their greater political life.

Conclusions

In conclusion, this study offers valuable insights into the dynamics of Canadian priorities during the 2021 Canadian Election, and challenges the applicability of Inglehart's postmaterialism thesis to the Canadian context. This paper demonstrated a notable positive correlation between income and the prioritization of materialist values among Canadian voters. Even when controlling for age, education, and the impact of COVID-19 concerns, this association remains robust. These results challenge the scarcity hypothesis that as individuals achieve higher economic security, they are more likely to prioritize post-materialist values such as self-expression.

Moving forward, further research is warranted to explore the complex interplay between economic well-being, socio-political factors, and value priorities among Canadian voters. Refinements may be needed to existing theories around perception of economic security, and further research must be done to assess the global accuracy of the post-materialism thesis.

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