Diversity and dual motivations of political participation: Evidence from the Canadian case on the impact of neighbourhood change

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Abstract

Interest in the relationship between diversity, social cohesion, and participation has grown in prominence over the past decade, with much research showing that community heterogeneity has substantive impacts on political attitudes and behaviours. Drawing upon the dual motiviations theory of participation, I examine the causal effect on both civic and political participation of increasing neighbourhood heterogeneity. Using pooled data from three waves (2003, 2008, 2013) of the Canadian General Social Survey linked with precise measures of neighbourhood-level diversity drawn from the Canadian census (1996, 2001, 2006, and 2011), I demonstrate that increasing heterogeneity motivates self-interested political participation but that there are no causal effects observed for the civic dimension of participation. This leads to the conclusion that the observed relationship between heterogeneity and low civic participation is the result of either habituation or sorting effects.

Keywords: political psychology, race, ethnicity and politics, immigration, social capital, citizenship, political participation, Canada, contextual analysis

1 Introduction

The relationship between increasing diversity and attitudes and behaviours is relevant for all societies and communities that have existing diverse populations and are further reliant upon welcoming newcomers to meet their social spending commitments and growth rates. And yet, there is real and increasing economic and political angst about the extent to which newcomers are reshaping the economies and policies of their new countries. Oftentimes these debates take place at a national level, but the reality is that newcomers select into neighbourhoods, join communities, and become citizens somewhere in the countries they join. Understanding the effects of increasingly diverse communities on both existing and new residents is critical to understanding the transformations occurring in much of the developed world.

This paper explores the impact of increasing neighbourhood heterogeneity on civic and political behaviours from the perspective of the dual motivations theory of participation (Campbell 2006). It focuses on the Canadian case which has a multitude of homogenous and heterogenous communities across various relevant measures of diversity. I focus on identifying the short-term causal effects of neighbourhood change on behaviour. I am concerned with the central question: *what is the relationship between neighbourhood diversity, broadly understood, and political participation, also broadly understood?* To answer this, I first introduce the existing literature and debates, describe a set of hypotheses to be tested, turn to explaining my modelling strategy and how I employ relevant concepts, show the findings, and then conclude with a discussion and the outlining of a further research agenda. I demonstrate that increasing heterogeneity motivates self-interested political activity but does not impact civic participation, and ultimately does not increase a cross-pressured likelihood to vote.

The need to better understand contextual diversity has not gone unnoticed in the literature, with the past decade seeing a renewal in contextual research focused that first started in the mid-20th century with the foundational study of Key (1949) that focused on the effects of ethnic diversity (black-white proportions) on vote turnout in the southern United States A more recent wave of interest was kick-started by Putnam (2007) who argued that increasing social heterogeneity, driven by immigration, reduces social capital (defined by Putnam as social networks and the associated norms of reciprocity and trustworthiness). Since then, increasingly sophisticated research has shown that racial and ethnic diversity can drive down trust, civic participation, and frequency and depth of interactions between members of a society (Dinesen

and Sønderskov 2012).[1]

More recently, researchers have begun to unravel a much more complex story around the effects of increasing heterogeneity. Further research has shown that while ethnic diversity does tend to generally lower social and political participation, the relationship is complex and mediated by a variety of compositional (i.e. group-specific characteristics) and contextual (i.e. the conditions and environment in which people live) features (Johnston and Soroka 2001). Some promising work has been done in this area, with scholars showing that the effects of ethnic diversity are moderated through factors such as composition of social networks and types of interactions (Stolle et al. 2008), ethnic segregation (Sturgis et al. 2014), age and generation (Stolle and Harell 2013), trust in state institutions and policies (Sønderskov and Dinesen 2016), whether or not ethnic difference is mobilized by political parties (Helbling et al. 2015), and 'politicized places' which occur when diversity increases and the saliency of the diversity increases at the national level (Hopkins 2010). Ethnicity has also often been modelled as relationships between two, sometimes three, groups as opposed to a nuanced appreciation of multiracial or super-diversity (Vertovec 2007) which has become the norm in sociological or medical literature (Bobo and Hutchings 1996; Doucerain et al. 2013) and has been somewhat used in the political science literature on attitudes (Oliver and Wong 2003).

Moreover, this research agenda has focused primarily on understanding the interaction between various factors and ethnicity, with little or no attention paid to other forms of diversity. However, other dimensions of diversity are likely important as well – if ethnicity limits the depth and frequency of communication and interactions between heterogenous populations then other social groupings such as age, income, education, religion, political attitudes, class, and language are likely to do the same. Much of the political psychology literature that underpins the mechanisms by which diversity is said to influence participation is based on social identity theory that explicitly recognizes the multitude of identities that individuals simultaneously hold (Ashforth and Mael 1989). While ethnicity may be the most salient in some conditions, other conditions may give rise to other features of diversity that are more salient (e.g. language in Quebec or religion in Israel). Imagine two neighbourhoods — one populated entirely by white anglo-saxon devout protestant retirees and another similarly ethnically homogeneous neighbourhood populated by a range of young families, working professionals and retirees that generally do not

1. Throughout this paper racial refers to physical characteristics and features, whereas ethnicity refers to cultural factors. This is operationalized through ancestry traced to country of origin which, while it fails to fully capture either the ethnic or racial dimension, generally captures both in broad terms.

attend church. The literature largely model these neighbourhoods as identical even though they may be associated with significantly different rates and types of civic and political participation. Moreover, these neighbourhoods are not hypothetical – they exist: New Tecumseth, Ontario fits the former characteristics whereas a community near Niagara a few hours away fits the latter.

Finally, much of this literature has focused on civic participation or social trust, with less work done on political participation measures. The contextual work that does exist on political participation has primarily concerned idea-based diversity such as ideology and partisanship as opposed to demographic features such as age, income, language, or ethnicity (Mutz 2006; Huckfeldt 2007). Where political participation has been the focus, the dual motivation theory has been applied where political participation is said to be motivated by both a civic sensibility (i.e. I vote because it is my duty in a democratic society) and a self-interested one (i.e. I vote because party x is the best one for me/my country) (Campbell 2006). This paper draws upon recent methodological advances in the study of the diversity-social capital relationship and extends these ideas to more explicitly political forms of participation that have been found to be influenced by similar factors. Throughout this paper, I draw upon Van Deth's (Van Deth 2014) conceptual map of political participation. I use both Political Participation I and II from his typology which includes only those activities are either located in the sphere of or explicitly target government/politics. Specific activities include voting, volunteering or being a member of a political party, contacting a politician or a newspaper, participating in a demonstration or march, signing a petition, and attending and speaking out at public meetings. This narrow definition excludes other forms of potentially politically participation such as civic engagement (e.g. volunteering, see Laxer 2013) and expressive/individualized action (e.g. political consumerism, see Stolle and Micheletti 2013).

Canada offers an exceptional case to study both ethnic and non-ethnic diversity levels as it has both homogenous and heterogenous communities across various relevant measures. While neighbourhood-level studies of Canada have indicated a negative relationship between ethnic diversity and participation, no study has yet drawn extensively on the available data to explore other diversity dimensions. While the literature suggest that linguistic differences offer the most promising alternative, other factors such as age and income may also be contextually relevant ones – each of these features has the potential to mobilize political participation. Language-oriented explanations of other social phenomena are found in the literature on political culture in Canada where persistent attitudinal and behavioural differences have been traced

to linguistic insecurity (Gidengil et al. 2004) or linguistically-caused cultural isolation (Berry and Kalin 1979). Linguistic and religious explanations are also a major component of the foundational texts of political culture in Canada: Hartz (Hartz 1969) and Horowitz (Horowitz 1966). Interestingly, this focus on language has not meaningfully extended to the small body of literature on context and political participation in Canada (Kazemipur 2006, 2009; Raney and Berdahl 2009; Laxer 2013; Gravelle 2017, 2018), with no rigorous examination of linguistic diversity.

2 Modelling participation

There are two primary mechanisms described in the literature by which contextual diversity could impact participation: social distance, and mobilization. The literature on social capital suggests that as diversity increases our social distance from our neighbours and would-be networks (sometimes called 'bonding social capital') also increases. Social distance, which Bogardus (1926) argues exists independently from physical distance, inhibits communication and collaboration; this mechanism has been demonstrated empirically as people have been found to more readily trust and cooperate with one another when the social distance between them is less (Akerlof 1997; Apicella et al. 2012) and more generally form socially homogeneous groups and networks (McPherson et al. 2001). In this way, increasing diversity inhibits frequent communication and building of relationships (Stolle et al. 2008) as well as social activities (Alesina and La Ferrara 2000). The increase in social distance in turn should have a suppressive effect on the participation of individuals in heterogeneous neighbourhoods. There is also an anticipated differential reaction for minority and majority populations as increasing diversity means more out-group individuals for majority groups while it generally means more in-group individuals for minority groups (Abascal and Baldassarri 2015).

Alternatively, the mobilization hypothesis is grounded in 'realitistic group conflict' (RGC) theory (Newman et al. 2016). This hypothesis suggests that increasing diversity activates competition between groups over limited resources which can spur further political participation. Scholars have linked majority-group hostility to increasing levels of minority groups as a reaction against governmental policies that ultimately mean a decrease in majority group status, power and advantage (Giles and Evans 1986). In the short-term (without sustained contact), stereotypes and inter-group hostility are expected to increase (Oliver and Wong 2003) particular in metropolitan areas with high-levels of diversity. Thus, increasing heterogeneity will actually

have a politically mobilizing effect. Note that heterogeneity will only increase conflict if there is the perception of competition over resources. Age, income, ethnicity and language could all trigger this in a local context, with different groups having different priorities for services provided by governments and community groups. Unlike social distance, RGC implies heightened political participation for both in- and out-groups with increasing diversity. Majority groups become more threatened and minority groups become more politically viable and able to compete.

These two theories contradict one another with regards to the effects contextual diversity will have on the prototypical measure of political participation in democracies: turning out to vote. It is unclear from this literature whether the increased social distance will be associated with lower levels of voting or if the increase mobilization from inter-group competition will be associated will higher levels. To assess the difference in direction of these hypotheses, it is useful to distinguish between civic and political participation with the dual motivations theory of public engagement described above(Campbell 2006). Individuals may engage in political participation for a variety of civic, political, and personal reasons and neighbourhood diversity is likely to impact these motivations in differing ways. Increasing social distance should reduce the presence of similar values, social norms, and ultimately civic participation. Meanwhile group conflict should increase participation motivated by political self-interest. Thus there may be countervailing pressures that can be results in null findings Bhatti et al. (e.g. 2017). Activities can be grouped into those that are likely to be civic (e.g. volunteering, donating to a cause, and group memberships), those that are likely to be political (e.g. writing to your representative, signing a petition, participating in a demonstration or march, volunteering for a political party, attending a public meeting), and those that are likely to be mixed (e.g. voting). Voting is the prototypical example of a mixed activity that is simultaneously a self-interested act and widely perceived to be a civic duty. Van Deth (2014) examines this in his "motivational definition of political participation" where individuals can be said to engage in the basic acts of political participation from both politically-motivated and politically-agnostic perspectives. These twin motivations help explain the phenomenon of "late deciders" who have no strong partisan preference but indicate that they will certainly vote. We should expect differential effects for the different categories of activities.

First I develop a modelling strategy for each of the explanatory variables and then turn to understanding differential effects based on type of participation. I include explanations and expected relationships for all explanatory variables including those variables typically used as

controls and thus, this paper includes an unusually high number of hypotheses. In the interest of clarity, see Table 1 for a reference of hypotheses, expected relationship with a political participation index (described below), and the source literature. Again, while most contextual studies include individual level features as controls and not as hypotheses, due to my focus on political participation, I have included literature and expectations of basic demographic variables in the individualized model section below.

Table 1: Hypotheses and expectations

		Expected	Literature
Individualized hypotheses (H1)			
A	Female respondents	+	Coffé and Bolzendahl (2010)
B	Older respondents	+	Melo and Stockemer (2014)
C	Higher status respondents	+	Verba and Nie (1972)
D	Visible minority respondents	−	Andersen and Milligan (2011)
E	Long-time stable residency respondents	+	Abascal and Baldassarri (2015)
Contextual hypotheses (H2)			
A	Low income neighbourhoods	−	Abascal and Baldassarri (2015)
B	High transiency neighbourhoods	−	Abascal and Baldassarri (2015)
C	Ethnically heterogeneous neighbourhoods	+	Putnam (2007)
D	Linguistically heterogeneous neighbourhoods	+	Ramakrishnan (2005)
E	Neighbourhoods with income heterogeneity	+	Duncan (2010)
F	Neighbourhoods with age heterogeneity	+	*included for completeness*
G	Non-ethnic heterogeneous neighbourhoods	+	*novel contribution*
Relational hypothesis (H3)			
A	Co-ethnics (civic)	+	*novel contribution*
B	Co-ethnics (political)	*null*	*novel contribution*
Habituation hypotheses (H4)			
A	Recent increase in ethnic diversity	+	derived from McClurg (2006)
B	Recent increase in non-ethnic diversity	+	Newman and Velez (2014)
Type of participation hypotheses (H5)			
A	Civic participation	−	derived from Campbell (2006)
B	Political participation	+	derived from Campbell (2006)
C	Difference between political and civic	++	derived from Campbell (2006)
D	Vote in local election	null	derived from Campbell (2006)

2.1 Individual characteristics

Gender is said to have a strong influence on both frequency and type of political participation engaged in. Coffé and Bolzendahl (2010) show that women are more likely to vote (as is the case every election in Canada) and participate in private forms of activism, whereas men are more likely to participate in higher-effort participatory activities such as contacting representatives

or attending public meetings. Overall, I anticipate female respondents to report slightly lower levels of overall participation. A second individual characteristic is age which again has been to shown to have differential effects, with older individuals tending to vote and be more civically engaged while younger individuals tend to be more involved in alternative forms of political participation (Melo and Stockemer 2014) that are not measured here; I thus expect age to be positively associated with the forms of participation examined here. A third factor is education with higher education levels associated with higher status and overall higher levels of political participation across the board, with particularly strong effects on those forms of participation with higher entry costs (e.g. attending a public meeting) Verba and Nie (1972). [2] A fourth factor is linguistic ability, with those who speak the primary language of a country being positively associated with higher levels of participation (Johnston and Soroka 2001). A fifth factor is ethnicity, operationalized here as visible minority or white (a more sensitive measure is used for neighbourhood diversity) with the expectation that being a visible minority is negatively associated with political participation (Andersen and Milligan 2011). A final factor that has been associated with higher levels of political participation is residential stability (length of time lived in the neighbourhood) (Abascal and Baldassarri 2015).

H1: Individual-level characteristics are positively associated with of political participation. Sex (A), Age (B), Education (C), first-language (D), ethnicity (E), and length of time residing in neighbourhood (F) are all relevant individual-level characteristics.

2.2 Contextual characteristics

Moving beyond individual features, there are a base set of neighbourhood contextual features which have been shown to be relevant for the participation patterns of residents. Ethnic diversity is frequently used, but I expand this measure to include diversity in age, income, and language. For the three alternative measures of diversity, I create an overall measure of non-ethnic heterogeneity of a neighbourhood to more comprehensively get at the potential impacts of diversity. In addition to these heterogeneity measures, Abascal and Baldassarri (2015), albeit in an examination of trust, argue that neighbourhood average income and transiency rates have stronger effects than measures of ethnic diversity or social distance. I retest these findings here, which leaves seven contextual variables: ethnic diversity, linguistic diversity, income diversity, age diversity, overall non-ethnic diversity, low income neighbourhoods, and high tran-

2. Education is an imperfect but commonly used proxy for socioeconomic status that can also be proxied as income; I have chosen to use education here due to some missing data problems with the income variable.

siency neighbourhoods. Note that Kazemipur (2006) found a Canadian exceptionalism where increasing diversity actually increases social trust: "the positive relationship found between ethnic diversity and social trust—that is, as the former rises, the latter increases as well". This is inconsistent with other findings in the Canadian context, but can be retested here.

> *H2: Low income (A) and high transiency (B) of a neighbourhood can suppress political participation. Furthermore, neighbourhood-level social distance characteristics are associated with political participation. Ethnic diversity (C) and non-ethnic diversity (G) are expected to be erelvant. Sub-categories of non-ethnic diversity include linguistic (D), Educational attainment/Income (E), and Age (F).*

2.3 Relational characteristics

McClurg (2006), in studying politically majority/minority communities, found differential impacts of increasing/decreasing diversity. He showed that only minority groups experience a political mobilization effect from increasing diversity (which generally means their portion of the population has increased). I build upon these arguments by further examining context in relational terms. This should be observed along the civic dimension: as the proportion of the community that an individual shares a salient characteristic with increases there should be an observable an increase in participation. We have no *a priori* expectations around the effects of co-ethnics on political participation.

> *H3: Individual-specific relational measures of same-ethnic group should be associated with civic participation (A) but not with political participation (B).*

2.4 Habituation characteristics

The fourth set of hypotheses is implied in much of the literature but tested in few is that intergroup relations in diverse societies might be tense at first but their impact over time become muted as groups who experience sustained and equitable contact over time see an increase in trust and cooperation and a lowering of group threat (Allport 1954). Research has shown that it is recent change and not current size (Newman and Velez 2014) that influences perception of out-groups more strongly. Kaufmann (2017), looking at immigration attitudes and populist right voting, argues that this is due to the threatening changes of increasing diversity fading over time and thus the observed effects of RGC will fade as well. Again, the implications of these scholars is that trust increases and intergroup conflict and competition decreases over time through a habituation effect. This argument is found in Putnam (2007) but not tested.

Note here that there is a reliance upon contact theory (Allport 1954) which argues that positive habituation effects only exist in situations where groups experience sustained and equitable contact over time. We cannot be certain that such conditions exist in the neighbourhoods in our sample and so test these expectations only indirectly.

Additionally, looking at changes allows me to address an important difficulty in the contextual literature: accounting for residential sorting/selection effects. It may be that those surveyed in heterogeneous neighbourhood's differ systematically from those who choose to live in homogeneous ones, as individuals with hostility or aversion towards out-groups are most likely to self-segregate into homogeneous neighborhoods (Bobo and Zubrinsky 1996). It is simply not possible to assign treatment and control populations to live in specific contexts. Despite this challenge, several approaches have been tried: using self-reported comfort for heterogeneous neighbourhoods (Oliver and Wong 2003); using natural and field experiments (Enos 2017); and a novel agent-based simulation approach based on actual observed relocation patterns (Martin and Webster 2017). These studies generally find both sorting effects based on "nonpolitical neighbourhood characteristics" such as racial, income, and housing makeup as well as some socialization effects. Any study of the effects of diversity must therefore take very seriously the challenges of sorting to try and get more precisely at socialization and habituation effects.

> *H4: Both absolute and relative measures of neighbourhood diversity are associated with political participation. Recent ethnic (A) and other (B) diversity exerts an independent effect.*

2.5 Types of participation

As described above, the numerous explanatory factors found in H1-H4 are expected to impact civic and political participation differently. Increasing heterogeneity is expected to be negatively associated with civic participation but positively associated with political participation. Overall, the literature has stronger findings for civic effects and so I expect that as heterogeneity increases civic participation should decrease but political participation should decrease – the gap typically observed between the two should be narrowed. With regards to overall influence on the most studied measure of political participation (voting), I expect the results of the diversity measures to be more muted due to the countervailing pressures.

> *H5: Increasing diversity will be positively associated with civic participation (A), negatively associated with political participation (B) and very strongly associated with the difference between political and civic participation (C). Furthermore, the effects of in-*

creasing diversity will be more muted for likelihood to vote than the difference measure (D) due to cross-pressures.

3 Research design

To test the hypotheses described above, I draw upon data from Statistics Canada: the pooled results from three waves (2003, 2008, 2013) of the Canadian General Social Survey linked with precise measures of neighbourhood-level diversity drawn from the 1996, 2001, 2006, and 2011 Canadian censuses. The individual measures are described below. For contextual variables, the measurements are constructed using census tract aggregations of all household respondents.[3] The Canadian census tract level constitutes a neighbourhood of between 4,000 and 6,000 individuals.[4] I adopt Huckfeldt's definition of neighbourhood: "a shared geographic location and structural factor that influences attitudes and behaviours" (Huckfeldt 2007, 2). In Huckfeldt's view, shared geography itself is a sufficient conditioned to be "treated" as physical proximity itself is the treatment. Some critics have raised two objections: first, it is unlikely that those surveyed are "receiving the treatment" or are properly influenced by their context. Newman et al. (2015) demonstrate that objective measures of contextual features strongly predict perceptions of individuals residing in those contexts.[5] Second, the validity of using administrative units to assign individuals to neighbourhoods has been questioned. Wong et al. (Wong, Bowers, Williams, and Simmons 2012, 1153) argue that "people's perceptions of their environment do not resemble governmental units" and advocate personalized measures. In an innovative comparison between two personalized measures and government administrative units, Velez and Wong (2017) demonstrate the comparative validity of using census-based measures as opposed to alternative personalized measures. Here, the variables are developed using all census household respondents from the 2001, 2006, and 2011 censuses aggregated at the tract level. For summary statistics of all variables used see Appendix A. The modelling done here has assumed generally linear relationships, with some logistic transformations. Others have found parabolic relationships in relationship to political diversity (Campbell 2006), but I have not tested these hypotheses here.

3. I have constructed these variables from census respondents as Statistics Canada does not provide tract-level aggregations for all variables.

4. As shown by **kaufmann˙diversity˙2018**, this is the level of aggregation where greater diversity is associated with a reduced white native threat.

5. I have the data to replicate Newman et al.'s relationship between objective and perceptual measures. This may be worth adding as an Appendix for a subsequent iteration of this paper.

3.1 Outcome variables

The primary outcome variable used for H1-H4 tests is a single index of political participation that includes a range of activities: writing to your representative, signing a petition, participating in a demonstration or march, volunteering for a political party, and attending a public meeting; see Appendix A for question wording. This index is constructed using principle component analysis (PCA) to produce a set of loading values for each value which are then multiplied by the observed values to produce the index. This index can only capture the political self-interest motivation of participation, with the dual motivations tested more appropriately in H5 where different outcome measures are used. For H5 I have four different outcome variables. First, a measure of civic participation which includes: volunteering, donating to a cause, and group memberships is developed using the same PCA process described above (which I treat as a continuous variable). Second, the same measure of a political participation as those used for H1-H4 (which I also treat as a continuous variable). Third, I subtract the measure of political participation from that of civic participation to create a difference between an individuals political and civic participation.[6] It is this delta measure where I expect the effects of increasing diversity to be particularly pronounced with the gap typically observed between civic and political motivation shrinking. Again this is due to increased diversity decreasing civic participation and increasing political participation.[7] For all three variables I use ordinary least squares regression on the continuous measure rescaled from 0 - 1. See Appendix A for distributions of these outcome variables.

Finally, a measure of reported vote during the last municipal or local election is used to measure those acts of political participation that are motivated by both civic and political considerations. Reported vote in the local election is used instead of the measure for federal or provincial election because: first, reported vote in federal and provincial elections tends to be disproportionately high relative to actual vote; and second, as I am examining local context, it is likely that the effects will most strongly apply to local elections where decisions to the neighbourhood are most relevant. For this variable I run a logistic regression model appropriate for a binary dependent variable and provide graphical interpretation of the results.

6. An alternative would be an additive index as we expect the dual motivations to be additive rather than subtractive. This yields similar results.

7. I have tested a wide variety of alternative specifications of the models by including or excluding civic (e.g. number of hours typically volunteered) or political measures (e.g. speak at a civic meeting) with no substantive change in the results. Here I have only included the results most pertinent for the primary story.

3.2 Explanatory variables

Specific individual and contextual explanatory variables include all those described in Table 1 above and Appendix A below. Here I describe only those variables that require elaboration. The heterogeneity measures of ethnicity, language, income, and age are all constructed using a Herfindahl-Hirschman Index (HHI) (Rhoades 1993). This index measures the probability that two individuals randomly chosen from the population under investigation share a common group across the dimension under examination.[8] For ethnic diversity, visible minority membership is defined by being a member of one of the eleven ethnic groups captured by Statistics Canada.[9] For linguistic diversity I use a three-category measure of anglophone (English first language), francophone (French first language), and allophone (another first language). While there are a large number of "other" languages spoken in the Canadian context, the ethnic index should capture some of that variation and so the HHI is constructed using just three groupings. For age and income diversity I use the categories of the Canadian Census.[10]. To construct an overall measure of non-ethnic diversity, I take the mean of the HHI indexes of age, income, and language described above. This combined index approximates the likelihood that an individual shares one or more groups with other individuals in their immediate community.[11] These variables tend to not be normally distributed so I have performed a logit transformation to better meet the assumptions of linear regression. In addition to this statistical reason, a logit transformation is of benefit because the increases of heterogeneity will be most felt at the top and bottom of the distribution; an increase of 5 points of heterogeneity at a level of 0.05 (a doubling of diversity) and 0.95 (the complete elimination of diversity) will be more relevant than an increase at a level

8. HHI has been criticized due to its inability to differentiate between substantively different scenarios (for example see Abascal and Baldassarri 2015), particularly in cases where the only two possible categories are visible majority and visible minority. These criticisms are less relevant in the ecosystem of diversity examined here where there are many different groupings.

9. Statistics Canada: "Visible minority refers to whether a person belongs to a visible minority group as defined by the *Employment Equity Act* and, if so, the visible minority group to which the person belongs. The Employment Equity Act defines visible minorities as 'persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour'. Categories in the visible minority variable include South Asian, Chinese, Black, Filipinoff, Latin American, Arab, Southeast Asian, West Asian, Korean, Japanese, Visible minority, n.i.e. ('n.i.e.' means 'not included elsewhere'), Multiple visible minorities, and Not a visible minority." (Government of Canada 2017)

10. These age categories are: 15-24, 25-34, 35-44, 55-54, 55-64, and 65+. The income categories are: 0,000 - 4,999, 5000 - 14,999, 15,000 - 20,000...

11. This seems reasonable to me but has not been done in the literature. I am particularly interested in any feedback/thoughts on how to measure overall diversity. In part I want to capture the diversity across the most salient dimension which happens to be ethnicity most of the time but also I believe there is something to this other-forms-of-diversity argument. Lots of work to do on this. I wrote up code for a PCA on this index but that didn't really make sense to me theoretically so I abandoned it. Rather than age or income it may make more sense to use lifecycle and class.

of 0.45 or 0.55 (both a marginal and difficult to notice change). The second set of constructed variables are relational ones. Here I develop a measure for co-ethnic density measured as the number of co-ethnics in the census tract using the 11 categories described above.

A final set of explanatory variables are the dynamic ones. The dynamic variables are developed by looking at by subtracting the neighbourhood heterogeneity HHI index from the relevant census with the same measurement in the census conducted 5 years earlier. As described above, the problem of selection or sorting is a real challenge to any study using context. I thus test my habituation hypotheses by measuring diversity in a dynamic way through looking at 5-year shifts in heterogeneity of populations. This dynamic model, coupled with running the analysis only on those who have resided in changing neighbourhoods for 5 or more years, allows me to capture shifts in behaviours for populations not subject to the same sorting effects as their residency in that context predates the treatment. Unfortunately, this identification strategy lacks visibility into one counterfactual populations — those that lived in a particular context and relocated out. This population cannot be surveyed and matched to the neighbourhood and we have no way of knowing anything about them.[12] However, the problem presented by this population actually strengthens the argument as it is likely that the population who selected out of the increasingly heterogeneous neighbourhood are those that are most strongly impacted by the diversification and thus are those whose behaviour is most likely to change. The population that remains may be impacted less strongly or not have the means to relocate. Thus if a bias does emerge with this identification strategy, I would expect it to favour the null. For distributions of all these constructed variables, see Appendix A.

For all variables and specifications, measures have been normalized to a 0 to 1 scale for comparability purposes. The coefficients on the OLS models can be interpreted as the mean (percentage) change in the dependent variable to be expected from moving from the lowest observed value for an explanatory factor to the highest observed value.

4 Findings and Discussion

Table 2 contains the results for both individual and contextual models. Model 1 shows all the individual features and the two contextual features of neighbourhood transiency and log median income which provide the base set of features the literature confidently suggests are related to

12. There are some census-level measures of which area individuals previously lived in. Unfortunately, these respondents are not the same as those surveyed. I could potentially make an index of previous neighbourhood heterogeneity for each census tract. This could help is disentangling sorting effects.

political participation (H1A-H1F, H2A, H2B).

The coefficient on log median income of the neighbourhood is highly negative (a pattern that continues throughout all the models) which is surprising and contradicts earlier findings of Abascal and Baldassarri (2015) on social capital. This underscores the difference in effects observed for civic and political participation models; once controlling for individual features, increasingly affluent neighbourhoods actually see a decrease in non-minimalist forms of political participation. Models 2 - 7 show the addition of further contextual elements, with ethnic, linguistic, age, and income homogeneity as well as the overall index of neighbourhood homogeneity. The focus in the literature on ethnicity is not unwarranted with it maintaining both significance and the strongest associated with political participation even when accounting for other types of homogeneity. Income and linguistic diversity, as well as the index of the three, are relevant on their own but when ethnicity is included in the model, their relevance diminishes or vanishes. These alternative conceptions may only be activated in conditions where those features are more salient (e.g. language in Quebec or religion in Israel) – going forward, I generally exclude the overall non-ethnic diversity indicator in the models but subsequent work will need to be done to better understand the effects of other forms of diversity.

Table 2: Participation index, individual and contextual variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(Intercept)	15.91***	23.66***	22.58***	22.74***	23.69***	21.38***	22.56***
	(0.45)	(1.01)	(1.03)	(1.05)	(1.01)	(1.35)	(1.03)
Female	−1.87***	−1.67***	−1.66***	−1.65***	−1.67***	−1.67***	−1.66***
	(0.21)	(0.26)	(0.26)	(0.26)	(0.26)	(0.26)	(0.26)
Age	3.90***	3.18***	3.02***	3.13***	3.17***	3.15***	3.00***
	(0.52)	(0.64)	(0.64)	(0.64)	(0.64)	(0.64)	(0.64)
Education	11.36***	10.87***	11.03***	10.97***	10.87***	10.92***	11.03***
	(0.33)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)	(0.40)
Visible Minority	−6.80***	−6.42***	−5.83***	−6.27***	−6.41***	−6.40***	−5.83***
	(0.36)	(0.41)	(0.42)	(0.41)	(0.41)	(0.41)	(0.42)
Residential Stability	1.27**	0.91	0.99*	0.97	0.90	0.90	0.98*
	(0.40)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)	(0.50)
Residential Stability		−4.62**	−6.13***	−4.84**	−4.40**	−4.43**	−5.93***
(Neighbourhood)		(1.52)	(1.54)	(1.52)	(1.60)	(1.52)	(1.55)
Median Income		−11.02***	−12.76***	−11.53***	−10.90***	−5.24*	−11.41***
(Neighbourhood)		(1.25)	(1.28)	(1.26)	(1.28)	(2.58)	(1.60)
Ethnic Homogeneity			6.03***				6.39***
			(0.97)				(1.01)
Linguistic Homogeneity				2.75**			
				(0.87)			
Age Homogeneity					−0.94		
					(1.93)		
Income Homogeneity						−4.49*	
						(1.74)	
Non-ethnic Homogeneity							−1.91
							(1.37)
Language controls	✓	✓	✓	✓	✓	✓	✓
Regional controls	✓	✓	✓	✓	✓	✓	✓
R^2	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Adj. R^2	0.04	0.04	0.04	0.04	0.04	0.04	0.04
RMSE	26.70	26.33	26.32	26.32	26.33	26.33	26.32

Note: $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. All variables rescaled from 0 to 1. All models are OLS regressions on the political participation index. Controls not shown include language (Anglophone, Francophone, Allophone) and region (British Columbia, Prairies, Ontario, Quebec, Maritime) controls.

Table 3 shows the results for a set of relational models with Model 1 containing just a measure of co-ethnics and Model 2 containing an interaction between co-ethnics and visible minorities. The first set show the effects for civic participation, while the second show the results for political participation. The theory indicates that increasing the numbers of co-ethnics should be associated with an increase in civic participation through a greater number of socially-proximate individuals in your neighbourhood, but that the politically mobilizing effects of inter-group dynamics won't be observed as the ethnic homogeneity variable is already

accounted for in the overall heterogeneity measure. Models 2 show interactive terms, where it is to be anticipated that there are differential civic mobilization effects for minority and majority populations of increased co-ethnic density (Laxer 2013).

Table 3: Civic and political participation index, relational variables

	Civic participation		Political participation	
	(1)	(2)	(1)	(2)
Residential Stability	12.45^{***}	12.41^{***}	-5.33^{***}	-5.55^{***}
	(1.81)	(1.82)	(1.61)	(1.62)
Median Income	23.04^{***}	23.02^{***}	-13.02^{***}	-13.11^{***}
	(1.49)	(1.49)	(1.33)	(1.33)
Ethnic Homogeneity	9.43^{***}	9.15^{***}	4.78^{***}	3.50^{*}
	(1.57)	(1.79)	(1.40)	(1.59)
Visible Minority	-1.07	-0.80	-5.84^{***}	-4.59^{***}
	(0.87)	(1.21)	(0.78)	(1.08)
Own ethnicity (%)	3.11^{*}	3.41^{*}	0.80	2.19
	(1.29)	(1.59)	(1.14)	(1.41)
Minority:own ethnicity		-1.05		-4.87
		(3.27)		(2.91)
Individual controls	✓	✓	✓	✓
Regional controls	✓	✓	✓	✓
R^2	0.11	0.11	0.04	0.04
Adj. R^2	0.11	0.11	0.04	0.04
RMSE	29.80	29.80	26.48	26.48

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. All variables rescaled from 0 to 1.

Table 3 partially confirms the hypotheses, with an increase in co-ethnic density being associated with civic participation but not with political participation. Interestingly, the significance of being a visible minority vanishes with the own ethnicity measure and there is no interaction effect observed. It appears that co-ethnic density has a mobilizing civic effect for both visible minority and majority populations and that the observed lower participation rates for visible minorities can be attributed to low co-ethnic density in their neighbourhood (again already accounting for overall heterogeneity). These individuals may be particularly vulnerable to social isolation as they have no ethnic community to support or draw support from and underscores the importance of appreciating ethnically hyperdiverise contexts. On the political dimension, being a member of a visible minority group continues to be associated with lower levels of participation, but there are no effects of co-ethnic density, nor are there any interaction effects. Taken together, these findings support H3A and H3B.

Next, we examine the findings for H4 in Table 4 which contains the results for the dynamic models looking at the effects of increasing ethnic and non-ethnic diversity on the political participation measure. The first model is the same found in Table 2 (2) for comparison purposes, with (2) showing increasing ethnic heterogeneity, and (3) showing a subsample where we restrict respondents only to white respondents that have resided in the neighbourhood for longer than 5 years and been witness to the change in the neighbourhood measured in the increasing ethnic diversity measure. (4) and (5) show a re-test of whether non-ethnic heterogeneity in either absolute or dynamic terms is associated with a change in political participation.

Table 4: Participation index, dynamic variables

	(1)	(2)	(3)	(4)	(5)
Residential Stability	-6.13^{***}	-6.62^{***}	0.28	-5.93^{***}	-2.11
	(1.54)	(1.76)	(2.99)	(1.55)	(2.67)
Median Income	-12.76^{***}	-11.74^{***}	-10.25^{***}	-11.41^{***}	-11.05^{***}
	(1.28)	(1.43)	(2.32)	(1.60)	(2.55)
Ethnic Homogeneity	6.03^{***}	3.47^{**}	7.24^{***}	6.39^{***}	8.34^{***}
	(0.97)	(1.13)	(1.75)	(1.01)	(1.59)
Increasing Ethnic Diversity		6.19^{***}	8.77^{**}		
		(1.75)	(2.95)		
Non-ethnic Homogeneity				-1.91	-0.23
				(1.37)	(2.16)
Increasing Non-ethnic Diversity					5.32
					(4.51)
Individual controls	✓	✓	✓	✓	✓
Regional controls	✓	✓	✓	✓	✓
R^2	0.04	0.04	0.05	0.04	0.05
Adj. R^2	0.04	0.04	0.05	0.04	0.05
RMSE	26.32	26.40	27.19	26.32	26.68

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. All variables rescaled from 0 to 1.

Again, non-ethnic heterogeneity is not associated with political participation, but increasing ethnic heterogeneity exerts a significant and substantive effect on political participation independent from existing levels of ethnic diversity in a neighbourhood. Moreover, these results are robust to the exclusion of newcomers to the neighbourhood. These data show that white long-time residents are more politically mobilized after a period of increasing ethnic diversity in their neighbourhoods.

Thus far, I have been focusing almost entirely on political participation, but for Table 5 I show the results of the same set of covariates on the four different measures: civic participation,

political participation, the civic spirit difference between civic and political mobilization (as this measure increases the gap between civic and political participation widens), and whether or not the respondent reported having voting in the most recent local element. We anticipate that increasing ethnic diversity has a causal mobilizing effect on political participation as group conflict sets in, but a causal suppressive effect on civil participation as the mean social distance in the neighbourhood increases. We have no *a priori* expectations on propensity to vote as that act is cross-pressured through both social distance and mobilization mechanisms.

Table 5: Measures of participation all variables

	Political (1)	Civic (2)	Difference (3)	Vote (4)
Residential Stability	−2.04	7.67**	4.87**	0.20
	(2.67)	(2.91)	(1.80)	(0.23)
Median Income	−9.36***	23.59***	16.96***	−0.00
	(2.10)	(2.29)	(1.42)	(0.18)
Ethnic Homogeneity	7.02***	15.06***	3.98***	0.99***
	(1.61)	(1.75)	(1.08)	(0.14)
Increasing Ethnic Diversity	7.40**	−3.75	−5.69**	0.07
	(2.61)	(2.84)	(1.76)	(0.22)
Individual controls	✓	✓	✓	✓
Regional controls	✓	✓	✓	✓
R^2	0.05	0.12	0.03	-
Adj. R^2	0.05	0.12	0.03	-
RMSE	26.68	29.13	17.93	-

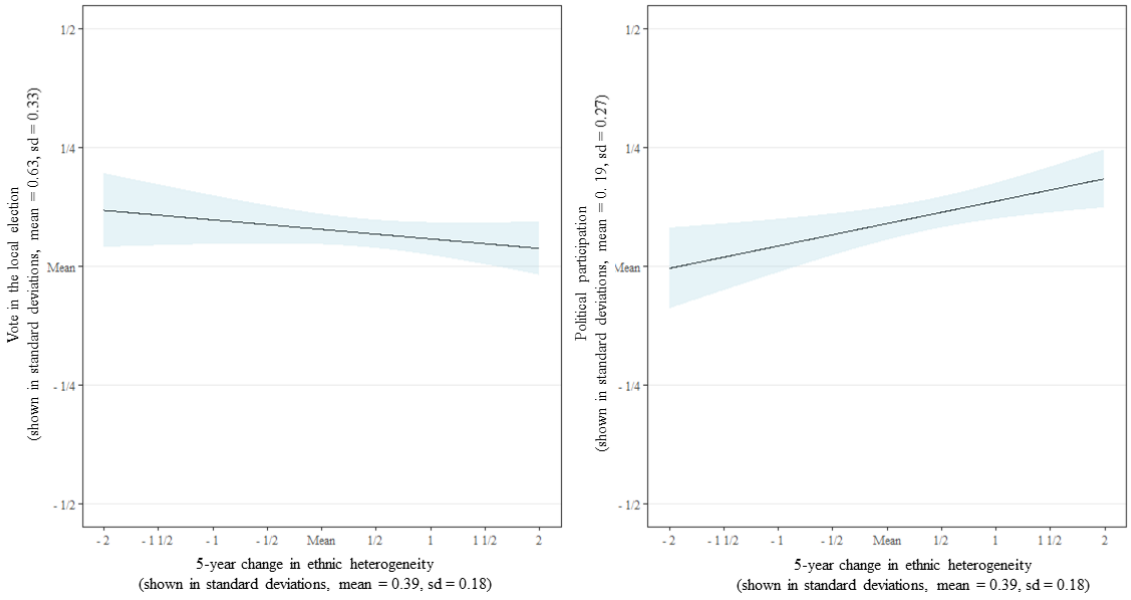
$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$ First three models are OLS and show OLS coefficients, fourth model is logistic regression with log likelihood coefficients. All variables rescaled from 0 to 1. All models performed on a subsample which contains only respondents who have a residential stability that exceeds the dynamic period examined.

As in Table 4 (3), political participation is mobilized by increasing ethnic diversity, but there is no observed causal effect of increasing ethnic diversity on civic participation. (3) shows that increasing ethnic diversity reduces the difference between civic and political participation as individuals are more politically motivated with no or a slight decrease in civic participation. As expected, high levels of homogeneity are associated with a relatively more civic spirit; furthermore, increasing ethnic diversity has no effect on our cross-pressured measure: propensity to vote in the local election. This confirms H5B,H5C, and H5D but does not confirm H5A on civic participation. Across all four models, accounting for change does not diminish the importance of ethnic homogeneity. The median income and residential stability are not relevant variables for propensity to vote, and overall residential stability also is not relevant for political

participation when accounting for increasing diversity.

To help visualize the impacts of these models, see Figure 1 and 2. Figure 1 shows the effects of increasing neighbourhood heterogeneity on the civic spirit and local voting measures modelled from Table 5 (3) and (4). The plots show the effect of moving from -2 to +2 standard deviations across the explanatory variable of neighbourhood homogeneity on the outcome measure (also shown in standard deviations).

Figure 1: Absolute heterogeneity on outcome variables

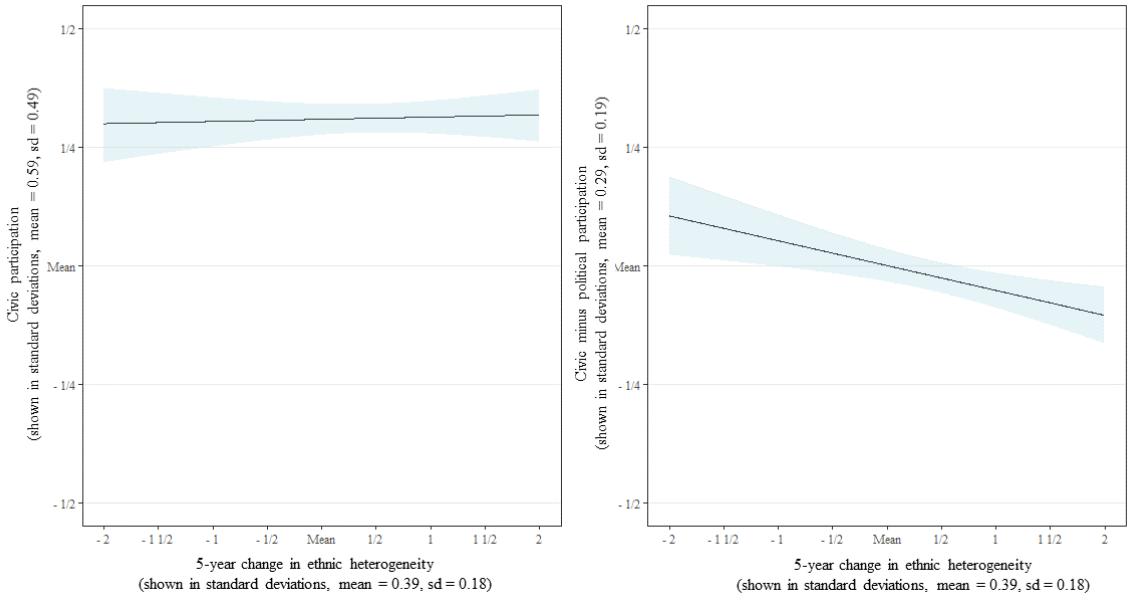


These plots are produced using predicted values based on a range of values in the key independent variable with median/modal values in all other covariates. As shown, there is a strong correlation between neighbourhood homogeneity and these outcome measures. These effects show that ethnic homogeneity is indeed associated with electoral participation and more generally with a more civically minded individual, even when accounting for neighbourhood residential stability and income levels. These findings corroborate elements of both Putnam (2007) and Abascal and Baldassarri (2015), and support H2D. However, they are only correlational and cannot go to causality due to the potential presence of sorting effects or unmeasurable long-term socialization effects. Again, accounting for sorting effects poses a major problem to any attempts at inference surrounding location-bases analyses. These findings thus should be considered secondary to those of Figure 2.

A stronger causal story is provided by looking at the other key independent variable: increases in neighbourhood diversity. Again, Figure 2 shows the effect of moving from -2 to +2

standard deviations across the explanatory variable on the outcome measure (also shown in standard deviations). Here we see the effects of increasing heterogeneity already accounting for absolutely heterogeneity: there is no effect of increasing heterogeneity on propensity to vote in the local election but the increase in heterogeneity leads to a decrease in civic spirit (individuals are relatively more likely to participate politically but relatively less likely to participate civically).

Figure 2: Absolute heterogeneity on outcome variables



This affirms H5A-D; while there is a politically mobilizing aspect of increasing heterogeneity this does not translate to increased likelihood of voting. Voting in the local election is truly dual-motivated then; if it was primarily self-interested we would expect the vote likelihood to increase causally as a result of increasing ethnic diversity. Instead voting in the local election more closely resembles the behaviour of civic participation with strong positive effects of absolute levels of homogeneity but muted effects from increasing diversity. We can see cross-pressures in the other variables of interest as well (see Table 5) where opposite coefficients seem to balance each other out into statistically null effects.

5 Conclusion

This paper has demonstrated the relevance of context for civic, political and dual-motivated participation. I have shown that increasing heterogeneity motivates self-interested political participation but that there are no causal effects observed for the civic dimension of participation.

H5A was not confirmed by these data; an increase in neighbourhood diversity does not in the short term lead to any changes in civic participation. This leads me to the conclusion that the observed relationship between heterogeneity and low civic participation is the result of either habituation or sorting effects. Increasing heterogeneity does not itself disrupt the existing social networks and civic organizations. Ethnic heterogeneity primarily moves up and not down, but a closer examination of increasing homogeneity would be worthwhile to assess whether there is a similar lag period before the effects of homogeneity are seen on overall civic participation in a community. This habituation period would not exist for political participation because mobilization is the result of self- or group-interest which ostensibly is triggered upon increasing neighbourhood diversity.

Furthermore I have provided some evidence for the dual motivations theory of participation with the finding that voting in local elections may be motivated more by civic than political considerations (on an aggregate level). Given these findings on ethnic diversity it is surprising that other forms of diversity were found to not be relevant features for understanding civic or political participation. The null findings with regards to other forms of neighbourhood diversity presents a further challenge to theories based on social distance. If ethnic difference can suppress civic participation, why would language, age, and income not behave in a similar manner? It may be that the modelling done here does not sufficiently differentiate between situations where linguistic difference as opposed to ethnic difference is a major cleavage or between ethnically homogeneous neighbourhoods and ethnically homogenous AND income homogenous neighbourhoods. Or it may be that age and income are not appropriate indicators of social distance and lifecycle or class-based measures would be better suited to this modelling approach. If the null findings persist, further research should be done to better understand why only ethnicity seems to trigger the increasing social distance consequences.

Next steps also include understanding how non-immediate contextual factors that shape civic and political participation – period or crises effects which can mobilize majority populations (Hangartner et al. 2017), elite effects where the salience of ethnic difference is mobilized by parties (Helbling et al. 2015), regional effects (Soroka et al. 2006) ascribed to cultural context (Van Oudenhoven et al. 2006), metropolitan area effects (Oliver and Wong 2003) and perhaps state-led integration discourses (Salée 2010) – interact with local conditions. There is some recent evidence that those living in the most homogeneous communities are the most mobilized by sociotropic understandings of ethnic change in their countries which may complicate

the effects of diversity even further. This paper further complicates our understanding of the impacts of increasing neighbourhood heterogeneity on attitudes and behaviours of residents. That there are obviously complex and conditional effects should not dissuade further research as understanding these dynamics is critical for countries who continue to experience further social-grouping fragmentation.

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Appendices

A Measures and descriptive statistics

Variable	Measure	Scale	n	mean	sd
Political participation measures					
Index	Composite index of the participation measures below	0-1	-	0.198	0.271
Index	Composite index of the civic measures below	0-1	-	0.640	0.32
Index	Delta between the civic and political composites	0-1	-	0.442	0.367
Reported vote	Did you vote in the last municipal or local election?	0/1	-	0.63	0.33
Political: In the past 12 months, have you done any of the following activities:					
Volunteer	volunteered for a political party?	0/1	-	-	-
Protest	participated in a demonstration or march?	0/1	-	-	-
Contact	expressed your views on an issue by contacting a newspaper or a politician?	0/1	-	-	-
Petition	signed a petition (paper or Internet)?	0/1	-	-	-
Meeting	attended a public meeting?	0/1	-	-	-
Spoke	spoke out at a public meeting?	0/1	-	-	-
Civic: In the past 12 months, have you done any of the following activities:					
Volunteer	Volunteered?	0/1	-	-	-
Donation	Donated?	0/1	-	-	-
Group membership	Been a member of a one or more groups?	0/1	-	-	-
Individual measures					
Female	Sex of respondent	Dummy	-	0.53	sd
Age	Age of respondent at time of the survey interview	Continuous	-	47.94	18.31
Education	What is the highest certificate, diploma or degree that you have completed?	Seven-point scale from less than high school to doctorate	-	3.074	1.61
Language	What language did you first speak in childhood?	Anglophone, Francophone, or Allophone	-	-	-
Ethnicity	Cultural or ethnic group identified with	12 categories (including other)	-	-	-
Time in Neighbourhood	How long have you lived in this neighbourhood?	Six-point scale from less than 6 months to more than 10 years	-	4.336	1.107
Neighbourhood measures					

Variable	Measure	Scale	n	mean	sd
New residents (%)	Percentage of residents who have moved to the neighbourhood in the last 5 years	Continuous	-	0.181	0.094
Log Median Income	Median income from year prior to the census	Continuous	-	-	-
Ethnic diversity	Herfindahl-Hirschman Index based on 20 ethnic groups	Continuous	-	0.680	0.224
Linguistic diversity	Herfindahl-Hirschman Index based on anglophones, francophones, and allophones	Continuous	-	0.896	0.110
Income diversity	Herfindahl-Hirschman Index based on seven income categories	Continuous	-	-	-
Age diversity	Herfindahl-Hirschman Index based on 18-25, 25-35, 35-55, 55-65+ groupings	Continuous	-	0.199	0.022
Relational measures					
Own language (%)	Percentage of neighbourhood speaking the same language as the respondent	Continuous	-	0.901	0.196
Own ethnicity (%)	Percentage of neighbourhood of the same ethnicity as the respondent	Continuous	-	0.709	0.312
Dynamic measures					
Increase in ethnic diversity (%)		Continuous	-	-0.030	0.057
Increase in non-ethnic diversity (%)		Continuous	-	0.009	0.016

Figure 3: Distributions of outcome variables

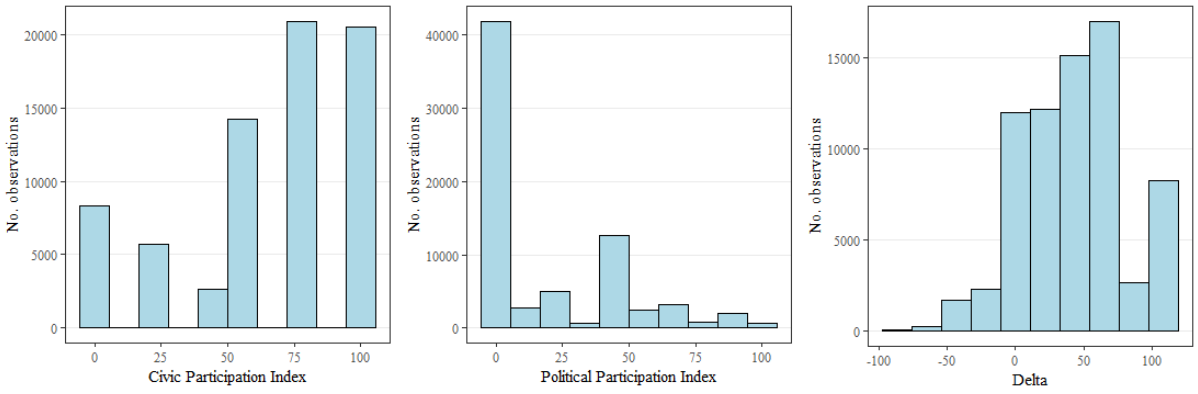
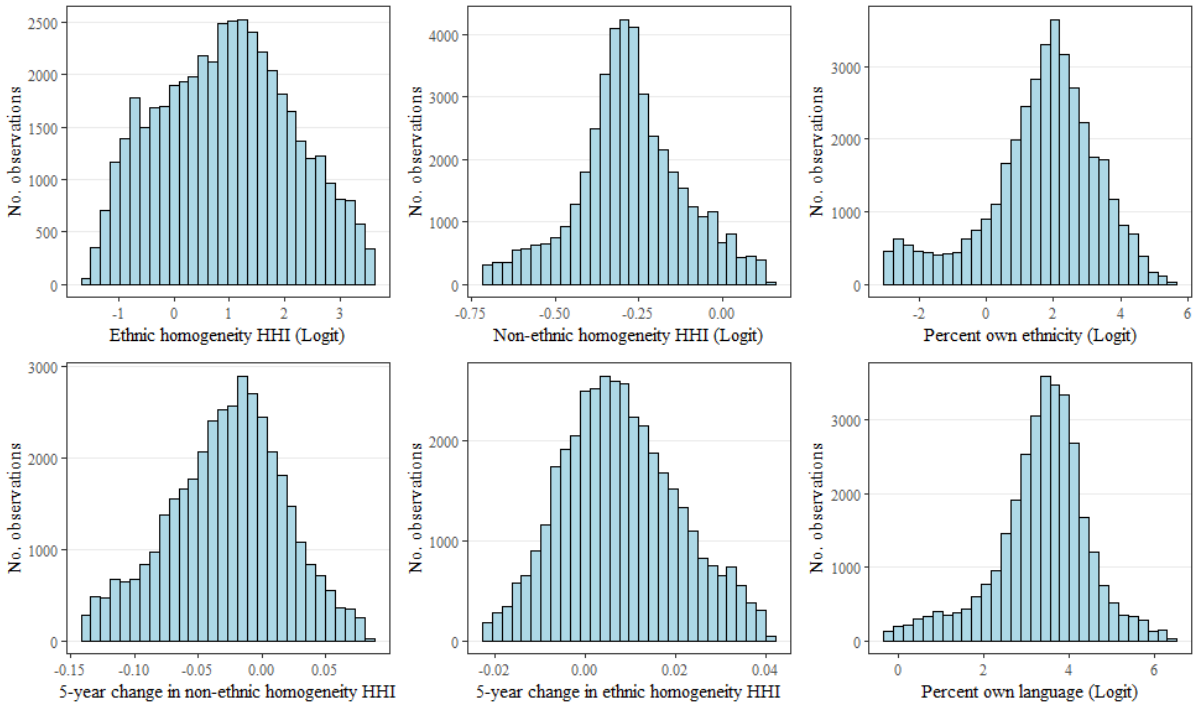


Figure 4: Distributions of key explanatory variables



B Overall findings

To return to the hypotheses laid out at the onset of this paper, Table 7 contains a high-level summary of findings. There are a large number of models run and, with the threshold of p ¡ 0.05 it is possible that one or more of the results are statistical rather than empirical phenomena. That said, many findings have reinforced previously observed phenomena and many of the findings have met more stringent thresholds of 0.01 (one in a hundred) or 0.001 (on in a thousand). The results most vulnerable to this concern are the dynamic models hypothesized in H4 and H5. Dynamic modelling is not commonly performed with survey data because panel studies are costly and suffer from poor retention and the sheer number of observations needed to detect the independent effect of absolute and relative values are often too high. The observation of such effects (even at only a 0.05 level) here in the data are strongly suggestive of both habituation and causal effects.

Table 7: Hypotheses, expectations, and findings

Hypothesis		Expected	Finding (all controls)
Individualized hypotheses (H1)			
A	Female respondents	+	−
B	Older respondents	+	−
C	Higher status respondents	+	+
D	Visible minority respondents	−	−
E	Long-time stable residency respondents	+	*null*
Contextual hypotheses (H2)			
A	Low income neighbourhoods	−	+
B	High transiency neighbourhoods	−	*null*
D	Ethnically heterogeneous neighbourhoods	+	+
E	Linguistically heterogeneous neighbourhoods	+	*null*
F	Neighbourhoods with income heterogeneity	+	*null*
G	Neighbourhoods with age heterogeneity	+	*null*
H	Non-ethnic heterogeneous neighbourhoods	+	*null*
Relational hypothesis (H3)			
A	Co-ethnics (civic)	+	+
B	Co-ethnics (political)	*null*	*null*
Acclimatization hypotheses (H4)			
A	Increase in ethnic diversity	+	+
B	Increase in non-ethnic diversity	+	*null*
Type of participation hypotheses (H5)			
A	Civic participation	−	*null*
B	Political participation	+	+
C	Difference between political and civic	++	++
D	Vote in local election	null	*null*