A Framework for Social Capital

For Community Mobilization to Climate Action

Vancouver, BC, CANADA

2021

Prepared by:
Michael Unrau (he/him/his), PhD, Sustainability Scholar 2021, The University of British Columbia

Prepared for:
Leslie Ng, Sustainability Specialist (SUS-CEAP), Planning, Urban Design & Sustainability,
The City of Vancouver, B.C., Canada

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I would like to acknowledge that this project's research was about the place currently called Vancouver, which is on the unceded ancestral lands of the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish), Stó:lō and Səl̓ílwətaɬ (Tsleil- Waututh) Nations. I also wish to acknowledge that the place on which I worked for this project (due to Covid-19 restrictions) was on the traditional territories of the Blackfoot Nations, the Sarcee Dene of Tsuut'ina and the Stoney Nakoda of Morley, the Métis Nation (Region 3), and all people who make their homes in the Treaty 7 region of Southern Alberta. Lastly, I would like to acknowledge the place on which I studied as an uninvited settler scholar: the unceded territory of the Syilx (Okanagan) Peoples who have lived in the Kelowna, British Columbia region prior to settler nations arriving there. I am grateful for the opportunity afforded to me to work, study, and play on these lands.

As a researcher who has studied the processes by which people and projects impact others' lives, I position myself within this research as a participatory collaborator that has been privileged by gender and North American / European settler descendent. I am currently growing toward greater self-reflexive learning about how I may benefit from colonialization, institutionalization, social and gender power dynamics, and economic globalization.

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Abbreviations

CEAP: Climate Emergency Action Plan
COV: The City of Vancouver corporation
EV: Elective Vehicle
IPCC: Intergovernmental Panel on Climate Change
SUS: The Sustainability Group at the City of Vancouver

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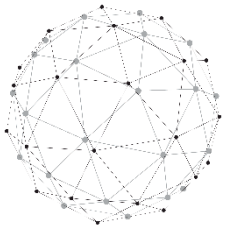
Executive Summary



"The idealised situation is a synergy between state and civil society that promotes social and policy learning." (Adger, 2001, para. 21)

This document presents a framework to measure social capital, and particularly focuses on how social capital may play a role in mobilizing communities toward climate action. It has four main offerings: 1) a Framework on Social Capital (what it is and how to measure it); 2) a framework section on Community Mobilization (what it is and how to measure it); 3) a summary of recent social capital trends in Vancouver; and 4) an analysis of how social capital and community mobilization toward climate action relate, and what indicators might be used to identify social capital's impact on community mobilization. The document also offers Recommendations about next steps on how the City of Vancouver (COV) might implement social capital into policy and practice for greater community engagement in the mitigation of climate change.

As a textual companion to this Report, an accompanying Social Capital Analysis Spreadsheet offers details on the analysis of selected / available data used as social capital proxies about Vancouver's trends over time. The proxy data is then correlated (with weighted values based on significance of the findings) to qualitative summaries as indicators of social capital and how they might relate to proposed mobilization indicators of community climate action. The Analysis Spreadsheet's findings are discussed here in this Report, within a larger qualitative context, and qualitative summary statements are offered to guide governance and policy development.

Key Findings

Social capital is a complex concept with multi-variables, but can be used as an "umbrella" term that seeks to understand social connectedness and a sense of belonging to the collective engagement of political action. It is related to community mobilization in how communities interact and move toward purposive action.

Many frameworks on social capital exist, but the Framework for this Report defined social capital as "*the connections and shared values between people, what they gain from such connections and values such as norms of trust and cooperation, and the resulting behaviours and purposeful actions that are beneficial for the group"* (based on Nahapiet & Ghoshal, 1998, p. 243-244; Putnam, 1993, p. 35; Lin, 2001, p. 12). The Framework focuses on three (3) key *Dimensions* (relational, structural, and cognitive social capital; Nahapiet & Ghoshal, 1998), and six (6) Indicator Types of social capital (based on Dudwick, Kuehnast, Nyhan Jones, & Woolcock, 2006):

1) Personal Networks and Social Connectedness; 2) Social Cohesion, Inclusion & Trust; 3) Social Health: Personal, Communal & Environmental; 4) Community Engagement & Collective Action; 5) Information & Communication; and 6) Empowerment & Political Action (defined in greater detail in "Six Indicator Types").

A series of measurement proxies as Indicators of social capital were identified based on these six Types, so that social capital could be measured in the Vancouver context.

The results show that people are getting together less than previously, and may even like being alone more. People feel less welcomed or that they belong than previously, which might be a reason why they feel like their community does not work together on problems as much as they used to. However, trust levels are nearly the same as previously, which is a good indication that there is social capital "stock" from which to draw from. Community members are notably less engaged with each other than previously, but are slightly more active politically. Thankfully, communities are taking actions to help the environment a little more. Meanwhile, COV is slightly increasing its pathways to build social capital through supporting projects and granting opportunities.

Several key concepts arose in the analysis regarding relating social capital to community mobilization. The first is *peer climate action* as a term to describe the peer influence of events triggered by an outside source (such as through COV) that moves people toward climate action. The next concept is *climate confidence*, which builds on climate literacy (knowledge-building) and climate capability (behaviour adaptation) to influence people based on shared values (cognitive social capital), scientific validity, and the actions needed for the sustainable future for family and community.

Recommendations

Below are some recommendations for COV and SUS to consider in next steps toward their goal of mobilizing communities toward climate action. More details are provided further below in the Conclusion & Recommendations section.

1) Do primary research on social capital's relationship to community mobilization by updating several surveys from COV and the Vancouver Foundation.
2) Research social capital and community mobilization specific to disproportionally impacted communities, because ccommunities that are the most impacted by climate change are also the communities most impacted by discrimination.
3) Do further research and implement strategies about "peer climate action," by establishing climate action as a social norm.
4) Do further research and implement a campaign about "climate confidence," which builds on "climate literacy" (knowledge-building) and "climate capability" (behaviour change), by addressing the underlying values that drive social change.
5) Use a 2-tiered strategy approach: Build long-range support for communities' social capital AND build strategies about "punctuated" social change, which are short but broad-scaled rapid-shifts in community perspectives or behaviour (e.g. the #MeToo movement, but designed to be about climate action).
6) Deeply involve community through a multi-stakeholder process of City-led but citizen-owned decision-making processes about community mobilization (see imagineCalgary).
7) Develop climate action policies that include *community preferences,* to increase trust and reciprocal engagement.
8) Focus on programs and strategies that reduce isolation and increase belonging, and increase social capital "stock" that is necessary in climate emergencies.
9) Implement policies to support community engagement programs and building designs to have "bumping spaces" where people are more likely to bump into each other and then engage (e.g. in high-rise apartments or condos).
10) Use the Analysis Spreadsheet as a "living document" of social capital research by adding data as it comes in and therefore track social capital trends over time.

Credit: City of Vancouver.

Introduction

Introduction

When the City of Vancouver's council passed the Climate Emergency Action Plan (CEAP) in November, 2020, bold actions were outlined to increase the public's response to address climate change. The CEAP followed a global movement of municipalities that declared a "climate emergency," first initiated in Darebin, Australia in 2016 (CACE, n.d., para. 3). To achieve the necessary emission reductions, the City of Vancouver corporation (COV) and the Sustainability Group (SUS) adopted the CEAP in response to the urgent need for climate action. The CEAP builds on the work of the Greenest City Action Plan (2010) and aims for even bolder, carbon reduction actions, focusing on buildings and transportation. Climate change is a complex systemic problem that no one government, institution, business or individual can solve alone. To engage the public in supporting bold policy moves and taking action to reduce carbon emissions, the Sustainability Group initiated a strategic review of its community mobilization efforts to engage citizens toward climate action. The community mobilization initiative decided upon outcomes of increasing climate literacy, generating greater civic engagement and leadership, and strengthening a diverse network of climate supporting relationships that would support the COV policies and efforts in increasing public climate action.

While there is increasing public engagement in climate change initiatives in Vancouver, as exemplified by the climate protest on Sept 27th, 2019, in which about 100,000 people rallied for reduced carbon emissions (Crawford, Eagland, & Saltman, 2019), encouraging communities to mobilize and take on climate conscious behaviour is difficult, with only mixed previous success (Sussman, Gilford, & Abrahamse, 2016, p. 5; Abrahamse Steg, Vlek & Rothengatter, 2005, p. 273; Dwyer, Leeming, Cobern, Porter, 1993, p. 275). Therefore, how local governments can catalyze mobilization effectively and efficiently is of key concern (Sussman et al., 2016, p. 5). Studies have shown that communities with greater social capital can be associated with a significant positive impact on people's perception of the effects of climate change (Jones & Clark, 2013, p. 14; Jones, Evangelinos, Gaganis & Polyzou, 2011, p. 509; Miller & Buys, 2008, p. 244). For example, connections were found in drought-prone communities in Australia between peoples' perception of water consumption policies and social capital (p. 244). Broad-scale complex challenges, like COVID-19, have shown that community belonging can become strong in the face to difficulty, and therefore in the interest of everyone in making the community better.[1]

This Report examines community engagement, connectedness, well-being, and political action as part of social capital and its role in community mobilization toward climate action. It proposes that by measuring social capital a deeper understanding will result in how to measure mobilization, find opportunities to catalyze communities toward climate action, and thus identify more effective tools and policies that may be used to increase general public climate action and reduce carbon emissions in response to the declared climate emergency.

[1] The BC COVID-19 SPEAK Results indicate that in Vancouver "community belonging" was strong more than it was weak, even when around 50% of the respondents claimed their mental health was worsening due to the pandemic (BCCDC, 2010).

Background

In order to understand how a social capital might impact community mobilisation toward climate action, a background and literature review is presented below on what social capital and community mobilization is. First, however, some perspective is offered on how consider a critically conscious approach to research.

Equity and Worldview Bias

Whether connecting individuals to increase their sense of belonging or engaging communities in efforts to mitigate climate change, social action is about *people*, and thus, equitable consideration of both researchers and those researched must be considered. Vancouver's population is 631, 485 (as of the 2016 Statistics Canada census), and with more than 42.5% born out-of-country, Vancouver is one of the most diverse municipalities in the world (World Population Review, 2016). The United Nations (UN) Universal Declaration of Human Rights tells us that "All human beings are born free and equal in dignity and rights" (1948, art. 1), with the Declaration of the Rights of Indigenous Peoples (UN, 2007) protecting the rights and freedoms of Indigenous Peoples across the world. And yet the same communities that are most impacted by structural racism and the systems of supremacy are also the same communities that are the most vulnerable to climate change (Lu, 2020, para 5).[2] To challenge these structural and systemic biases, the COV Equity Framework (City of Vancouver, 2020) applies an Indigenous-centered, racial forward, and intersectional approach to equity (City of Vancouver, 2020, p. 4). When considering those who have not been systemically treated equitably, it uses the the term "disproportionately impacted communities" to

> signify groups that are systemically excluded, underserved and underrepresented on the basis of their intersecting marginalized identities such as, Indigenous, Black, other racialized groups, low-income communities, 2SLGBTQ+, people with disabilities, immigrants, refugees, those experiencing homelessness, among others. (p. 4)

This Report acknowledges the Equity Reference Guide and follows in line with the COV Equity Framework focus.

City of Reconciliation Plaza Naming Project. Credit: City of Vancouver website.

Measuring Data from a Non-Colonial Lens

Linda Tuhiwai Smith (1999) declared that the term "'research' is probably one of the dirtiest words in the Indigenous world's vocabulary" (p. 1), indicating the inherent challenge in colonial-based institutionalized research methodologies. Inequitable research practices perpetuate the historical background of exploitation and misrepresentation by settler and white-dominant scholars and governmental agency policies (Ball & Janyst, 2008, p. 33; Wuttunee, 2019, p. 1). Quantitative data analysis is particularly challenged in this regard: survey responses to the statement "I feel welcomed in my city" (67% do not agree, according to this Framework analysis) does not include the oral narratives and historical traditions that reveal how oppression may be a factor in any single response. Simply put, the simplicity of a number to represent "belonging" in an effort toward

[2] Lu is quoting here Reverend Lennox Yearwood Jr. from Shondaland online magazine.

scientific objectivity excludes the complexity of the subjective context of personal experience. As Cohen and Stewart (1994) note, “mathematical descriptions of nature are not fundamental truths about the world, but models” (p. 410), and should be seen as an analogy only of human observation rather than fact.

To challenge the inherent inequities in quantitative research, this report takes a mixed-methods research approach that emphases qualitative analysis, contextualizes the positionality of the researcher, proposes and enacts several democratic research practices, and reconsiders the pathologically based colonialized medical approach to individual and social well-being research. The report also incorporates a worldview bias context (Unrau, 2021), which includes four worldview perspectives that often bias research: i) an inequitable research practice; ii) a single-paradigmatic lens (either/or objectivity or subjectivity); iii) a non-intersubjectivity understanding of society (i.e. a separatist worldview); and iv) a deterministic or causal understanding of relations (“this-equals-that” assumptions).

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Social Capital: An Overview

“Your corn is ripe today; mine will be so tomorrow. ’Tis profitable for us both, that I shou’d labour with you to-day, and that you shou’d aid me to-morrow” (Hume, 1740).

Even with the inherent challenges of researching human interaction, understanding how and why humans connect has enormous value. When people in communities trust each other and enact generalized reciprocity (i.e. “I’ll do this for you now because I know you will return the favour”), their connectedness can move them towards purposive collective action for their betterment and the well-being of others (Putnam, 2000, p. 142; Vancouver Foundation, 2011, p. 7). Social capital and its civic skill-building can lead to an economic advantage and political action (Knack & Keefer, 1997, p. 1251; Putnam, 2000, p. 143, 373, 434, 581). There are many concepts that can help researchers understand the benefits of a community’s connections and social networks: social cohesion, social well-being, social connectedness, and social capital. The term “social capital” draws on the term “capital” as resources or assets that are useful in productivity: physical capital (such as machinery) and human capital (such as education) may increase productivity; however, social networks can increase the productivity or collective action of individuals or groups (Putnam, 2000, p. 16).

The concepts behind social capital have existed for hundreds of years; however, the term itself has followed multiple paths and dimensions over the last one hundred and thirty. While it has been in usage since at least 1889 (Marx & Engels, 1889, p. 294), the term was used by L. J. Hanifan in 1916 in an effort to support community engagement in education (Putnam, 2000, p. 16). Hanifan defined it as tangible resources or assets that can be accumulated to benefit the community as a whole through the cooperation of its parts. Jane Jacobs described it as neighborhood networks (1961, p. 138), Pierre Bourdieu said it was the sum of resources of an individual or group (Bourdieu & Wacquant, 1992, p. 119), James S. Coleman suggested it is the function of the actions of actors (1988, p. S98), and Robert Putnam described it as the value of social networks (2000, p16). While the term has gone through a circuitous path with multiple definitions

and contextual usages, some confusing, it has become one of the most cited and analysed concepts in the social sciences in the last twenty years (Modena, 2009, p. 1) in an effort to understand how social networks increase the well-being of communities and engender them toward purposive action.

In part due to the inherent challenges in using a term linked to economics (as "capital") and one that represents un-quantifiable, subjective, and a dynamic nature of social experience, social capital has its critics. Durlauf (1999) states that the term is ill-defined, due to multiple inconsistencies and exponential variables that force its conceptual ambiguity (p. 2).[3] Portes (1998, p. 16) argues it is both a cause and an effect and thus suffers from circularity. Fine (2002, p. 797) states that the term is the result of economics colonizing the social sciences, and states that it is on shaky foundations due to the inherent difficulty in linking empirical observation to the social historical groundings of the term "capital" and its power dynamics in culture (p. 798).

While such weaknesses in the concept exist, Schuller, Baron and Field (2000, pp. 1-38) argue that the term's diversity and over-versatility can in some perspectives be strengths (Haynes, 2009. p. 17), and conclude that the concept has much promise. Because of its broad scope, social capital can be considered an "umbrella term" (Haynes, 2009, p.9; Whitley & McKenzie, 2005, p. 71; Modena, 2009, p. 1), in the sense that it covers multiple concepts that relate to social organization, social structure and social action (Claridge, 2018a, p. 2). While less apt as a functioning theory, it still maintains excellent heuristic value in describing and analysing important social phenomena described by other concepts, but collectively enabling such descriptions and analyses to work within a single concept.

Credit: Red Zeppelin, Unsplash.

Due to its varying meanings and broad scope, social capital as a concept has been divided into different types, dimensions, and functions. For this research, a participatory decision-making process was enacted to assist in defining the term (see "Definitions of Social Capital" in the Appendices). The next sub-section reviews both dimensions and functions, with types described further down in "A Social Capital Framework."

The Dimensions of Social Capital

Multiple authors have ascribed "dimensions" to social capital, with a leading perspective in the literature by Nahapiet and Ghoshal (1998). They propose three dimensions (*relational*, *structural*, and *cognitive*) as facets of the resources in a social network that may be mobilized toward purposive action.

The first dimension is relational, where social capital is an *asset* or *resource* or the shared acquisitions of individuals or groups that are created or leveraged through ***relationships*** in a network (Bourdieu, 1986; Putnam, 1993; Coleman, 1990; Fukuyama, 1995; Hakansson & Snehota, 1995; Granovetter, 1992). Bourdieu describes it as "the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (Bourdieu & Wacquant, 1992, p. 119). It is the tangible friends or the intangible results of a network like belonging, trust, or the behaviours that can be acquired to motivate approval through social norms and accountability.

Figure 1. A Relational Dimension where an individual benefits from "assets" such as trust from the network. Graphic by author, adapted from aelitta (Shutterstock).

[3] According to the Vancouver Foundation, many public members and donors do not resonate with the term, in part due to the difficult in understanding the term and why people should care (Vancouver Foundation, 2011, p. 11).

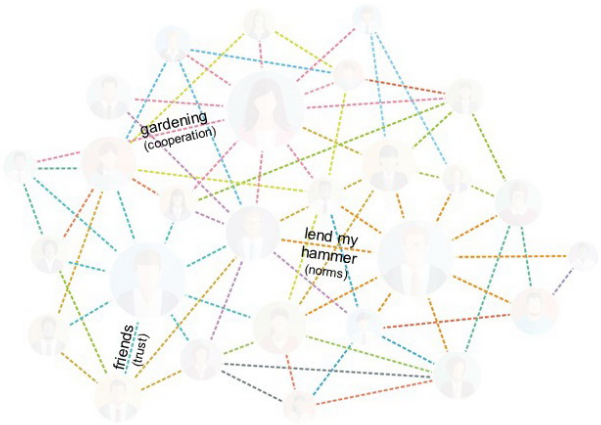


Figure 2. A Structural Dimension where the "network" itself is what ties people together.

The next dimension is that social capital is the social ***structure*** of rules and resources, or is the *network*, ties or links between people (Baker, 1990; Burt, 1992; Coleman, 1988; Lin, 2001; Putnam, 1995; Granovetter, 1992). A structural dimension describes the social organization or overall patterns of connections of trust between individuals; that is, the precedents and procedures of social norms, resource flows and habitual pathways created for one purpose that may be used for another.

Finally, the last dimension is ***cognitive***, and describes the shared systems of meaning or understandings and the shared narratives and social codes between people in a group (Cicourel, 1973; Grant, 1996; Connor & Prahalad, 1996; Nahapiet & Ghoshal, 1998). In this dimension, it is not the network itself or the resources acquired, but the shared beliefs, values and attitudes between individuals in a collective. It is the shared vision, goals, and purpose as a collective sense of being.

Figure 3. A Cognitive Dimension where the social connection is due to shared values, understandings, or a system of meaning.

Bonding, Bridging and Linking Social Capital

Social capital functions in three main and distinct ways. First, it functions by "bonding" individuals together *within* a social group, network or context (Putnam, 2000 p. 20). For example, a sports team may bond together over their shared goals of the team, and they may or may not be open to outside influence. These communities display "thick trust," or very close friendships and relationships that have strong and close ties to each other, like perhaps a new group of refugees that help vulnerable members of that community survive and thrive during the hardships of change.

Figure 4. "Bonding" social capital has strong ties in a unified group.

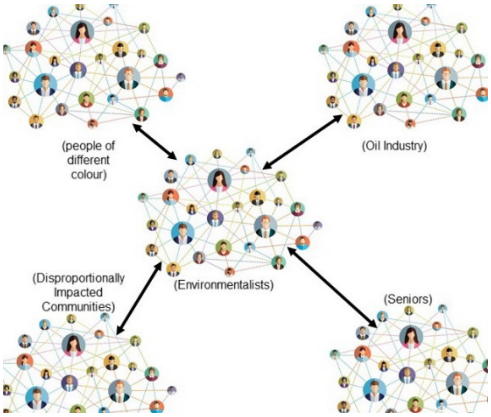


Figure 5. "Bridging" social capital occurs between diverse groups.

Social capital also functions by "bridging" *between* two different groups, communities or contexts (Putnam, 2000, p. 20, 144). While this type of social capital has weaker ties and "thin trust," or acquaintances less known to the individual but many more in numbers, it increases opportunities for external information and assets. When looking for a job, for example, it is better to reach out to weak ties (not-so-close

friends) as they will bring more opportunities than just your close friends. While bonding social capital is good for "getting by," bridging social capital is important for "getting ahead" (de Sousa Briggs, 1998, as cited in Putnam, 2000, p. 20). This function of social capital is specifically important in terms of bridging differences with communities that are unknown or even anxiety provoking to each other. For example, when a conservative group of white friends meets with a racially diverse group of liberal thinkers, both parties give the other the "benefit of the doubt" about their intentions (Rahn & Transue, 1998, p. 545). In this way, bridging social capital has the capacity to heal social wounds between groups, and may soften systemic injustices brought on by traditional but exclusive social norms.

Finally, "linking" social capital is where groups interact *across* power or authority flows in society, whether formal or informal (Szreter & Woolcock, 2004, p. 655). This social capital functions vertically, usually up or down in gradients of social power structures. Typically, linking social capital is exemplified when citizens engage with different levels of government, crossing the barriers of hierarchy to engage in political action.

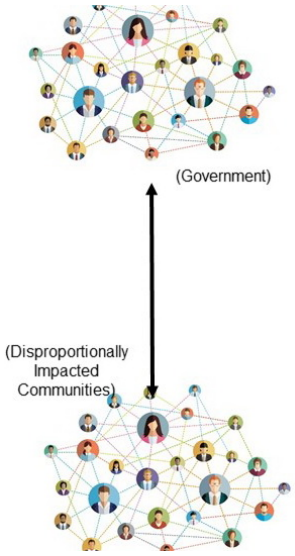


Figure 6. "Linking" social capital moves across power levels.

It should be noted that social capital can also measure the "bonding" of groups in strong ties and thick trust but that do not have a benevolent purpose for the broader society (Putnam, 2000, p. 19; Field, 2008, p. 79). For example, gangs may have very strong social capital, but use their strong ties to bring adversity to other groups.[4]

Initiatives to Measure Social Capital

In part due to the success of Putnam's research on social capital and his book *Bowling Alone: The Collapse and Revival of the American Community* (2000), a number of broad-scale efforts have been undertaken to measure social capital. The first major nation-wide measure was the "Social Capital Community Benchmark Survey," conducted by Harvard University and was the largest ever on civic engagement at point in the United States. The largest international initiative to measure social capital was The World Bank's Working Paper No. 18, "Measuring Social Capital: an Integrated Questionnaire" (Grootaert, Narayan, Nyhan Jones, Woolcock, 2004), that had an aim to design a toolkit for countries (often with less financial stability) to assess social capital. Two years later, the Working Paper was followed by a companion paper entitled "Analyzing Social Capital in Context: a Guide to Using Qualitative Methods and Data" (Dudwick et al., 2006) that focused specifically on qualitative approaches to research and data gathering. Statistics Canada's General Social Survey (Cycle 17), Social Engagement in Canada (2004) did its first national survey that incorporated dimensions of social capital in 2004. This survey, based on the Organization of Economic Co-operation and Development (OECD)'s 2001 international survey focused on developed countries to assess issues like quality of life, aging, safety, sustainable development, with the intention of measuring "well-being, with social capital considered an end result" (Franke, 2005, p. 3).

However, despite the local, national, and international efforts, measuring social capital is considered a difficult task (OECD, 2001). Some author's worry that the concept is not able to be validated empirically (Ponthieux, 2003, p. 242). Concerns around survey length, appropriateness, quality, sample size, government involvement or use of proxy issues are also common concerns (Hudson & Chapman, 2002, p. 7-9). Stone & Hughes (2002), calling for a operationalized standard in measurement, emphasize that social capital requires a measurement approach that is *theoretically informed*, is multidimensional, understands social capital as a resource to collective action, and acknowledges it as a network with scale (p. 2). The Canadian Policy Research Initiative (Franke, 2005, p. 6) suggests that a measurement approach must concretize a clear problem first, then build the concept from a theoretical framework connected to other analytical frameworks, and finally use clear hypotheses to formulate the variables / indicators used.

[4] Another classic example is the Klu Klux Klan.

While social capital and its measurement has challenges, it also has much promise. Its versatility as an umbrella term gives it broad scope with the ability to be specialized for local applicability. Government policies already impact social capital, and thus it would be "foolhardy for any policy-maker to ignore social capital altogether" (Field, 2008, p. 155). With several types, dimensions and functions, social capital is a concept that is valuable to governments in seeking to change behaviour and values in regards to environmental protection (Field, 2008, p. 155). By understanding how communities connect, engage, bond, bridge, and trust one another in reciprocal relationships, both governments and communities can move together toward collective action.

Credit: O. Lopez, Unsplash.

Community Mobilization: An Overview

"Although most people are aware of climate change, and many are concerned about it, this concern does not always translate into action, even though individual actions can have a significant effect" (Sussman, et al., 2016, p. 5).

The City of Vancouver has been mobilizing communities on topics of sustainability for decades (City of Vancouver, 2021, p. 2), and continues to support legacy SUS-led programs.[5] When the CEAP was approved in 2019, the focus became "community mobilization" in relationship to its Outcomes. The City realized it cannot reach its targets alone and would need significant community support for bold policy change. A team was created to advance the work on community mobilization in 2021 through clear outcomes, indicators for measurement, and implementation.

Mobilization toward climate action has never been more necessary. The recent Sixth Assessment Report on Climate Change (IPCC Report 2021), revealed that global surface temperatures in the most recent decade (2011-2020) were higher than any other multi-century warm period since about 125,000 years ago. Atmospheric CO_2 concentrations were higher in 2019 than any time in the last 2 million years (IPCC, 2021b). Communities need to do their part in reducing CO_2 emissions along-side City policies.

Community activation and therefore communal transformation can be achieved by mobilizing a broad cross-section of individual community members and leaders as well as community organizations (Wallack and Wallerstein, 1986 – see Cheadle et al., 1998, p. 700). Community (or social) mobilization is "a movement to engage people's participation in achieving a specific goal through self-reliant efforts" (Alstott, Madnick, & Velu, 2013, p. 2). It occurs as a result of three main reasons (Cheadle et al., 1998 p. 700). The first is that of empowerment, where under-represented communities to the social norm (including activists for climate action) self-organize and take action to increase the betterment of their lives (Cheadle et al., 1998, p. 700; Israel, Checkoway, Schulz, and Zimmerman, 1994, p. 149). Secondly, communities mobilize when they are a "competent community" (Cottrell, 1976, p. 197), where people collaborate effectively through a shared vision and goal toward positive change (which can be likened to a cognitive social capital network). The next is "community development" (Fawcett, Paine, Francisco & Vliet, 1993), where a network of individuals and organizations increase cross-organizational collaboration toward a greater shared goal.

[5] Such as Greenest City Grants, the Greenest City Scholars Program/CityStudio, Greenest City newsletter/social media, SUS's CityLearn Course, Amplifier Network, and Women4Climate Mentorship Program.

There are four broad categories that explain why a community might mobilize toward or away from climate action (as described by Sussman, et al., 2016, p. 4): i) self-interest and reasoned choices (via rational choice theory); ii) altruism and values (such as cognitive social capital), where people give up personal benefits to reduce carbon emissions; iii) multiple motivations inclusive of the previous two; and iv) individual or structural barriers (like mental, physical, or economic health). Collective action research reveals that negative attitudes toward people (or the environment) are the result of historical and structural bias rather than individual minds (Blumer, 1958, p. 3-7). Therefore, community mental health, systemic social norms and systems of meaning, and why individuals or groups habituate to certain behaviours, will lead to important insights as to what drives an individual's or community's behaviour (Unrau, 2019), and how it can be mobilized toward collective action.

Credit: The City of Vancouver.

Some researchers propose that communities have inherent capacities to adapt to emergencies like climate change (Adger, 2001, para. 15), specifically through collective action. How and why communities self-organize to access this adaptive capacity is studied through social capital, and particularly through structural or network social capital (para 14). For example, in the 1995 heat wave in Chicago, the risk of mortality increased due to location in high-rise apartments or hotels (para. 15). One factor was absence of working air-conditioning, but another was because they lived alone and stayed at home. Had social interaction between residents through a well-functioning bonding social capital or a developed structural social capital through building or government related programming and design been activated,[6] the risk of mortality may have been reduced (para 15.). In that case, government related policy could have played a role in ensuring building designs accentuated more social interaction than isolation. When the structural dimension of social capital is not guided by an effective government, communities need to consciously instigate structures that support social capital on their own behalf to pick up where the government or their agencies did not (para. 20).

Governmental intervention in communities is essential to community mobilization. Tompkins and Adger (2004, p. 10) have noted that adaption to climate change requires offering people the ability to become deeply involved in policy decision making processes (Jones & Clark, 2013, p. 14). Also, as Jones & Clark (2013) suggest (citing Lorenzoni, Nicholson-Cole, & Whitmarsh 2007): "it is now widely accepted that to encourage public engagement with climate change mitigation, exploration of local community characteristics [and thus social capital] is essential" (p. 12). They go on to suggest that governments need to encourage incorporation of local preferences in climate action policies, and that behaviour-change toward climate action is influenced by information dissemination in the social networks of communities with higher social capital (Jones & Clark, 2013, p. 15). Without sufficient information, individual awareness may inaccurately perceive low-risk effects of climate change. Overall, trust is to be emphasized, not only between communities and the government but between residents themselves, along with governmental intervention strategies to build dense networks (i.e. higher # of friends or people of trust), which are both correlative factors in behavioural change toward sustainability.

> It should be noted that the word "community" is not to be associated only with geographic communities of municipal neighbourhoods. Indeed, as "cognitive social capital" suggests, a community can be a network of individuals connected by a *system of meaning,* and as such, environmental communities or religious communities should be considered across geographies rather than through only municipal districts.

When a community has a high stock of cognitive social capital and they perceive the social costs and benefits of climate change mitigation policies, the argument amongst researchers is that a new social acceptability of policy mitigation strategies of climate action will increase (Jones & Clark, 2013, p. 15). In that case, climate action becomes a new social norm, where a "virtuous circle" of climate action responsibility becomes a contagion through a community (p. 14), influencing others to

[6] As Dominguez (2016) notes, "It is, therefore, critical to put more thought and consideration into their design as units are being built smaller and smaller in buildings where inter-level access is restricted for reasons of safety and security–whether real or imagined. Access to meeting places and nature are vital to individual and community health and can be better integrated into high-density design" (p. 21).

meet the new social norm in what could be called *peer climate action.*[7] When community members engage in bridging social capital frequently, they are more likely to trust people they don't know, and therefore when another member tells them the benefit of a photovoltaic rooftop electricity systems, for example, the experience of trust can enact peer influence toward a similar purchase.[8] In this way, social trust and collective action are mutually reinforcing (Putnam, 2000, p. 145). Perhaps approaching religious communities about climate action is a necessary step in this type of community mobilization. In this view, understanding local social capital can greatly assist in knowing how communities adapt to climate action policies (Jones & Clark, 2013, p. 16).

Research shows that greater social capital can lead to the reduction of energy consumption, in a positive correlation between social capital and government intervention (see Wang, Xiong, Li, Na, & Yao, 2020, p. 2).[9] Wang et al. (2020), suggests that lower social capital actually correlates to an increase of environmental pollution, but this changes in an inverted U-shape when social capital increases to a certain level such that environmental protection increases. Thus, government intervention that improves social capital can lead to a reduction in environmental pollution.

Gradualistic or "Punctuated" Social Change

Communities may mobilize in a gradual transition toward climate action; however, they may also transform in a spontaneous or sudden rapid-shift known as "punctuated" social change. Social systems that have rigidities and inconsistencies (such as static normative worldviews like "business-as-usual," or unstable economic conditions) have parts that may build tension over time, and even escalate toward a "tipping point" (see Cilliers, 1998, p. 111; Eldredge & Gould, 1972, p. 108; Goldstein, Hazy, & Silberstang, 2010, p. 108; McKelvey, 2001, p. 138). This may happen as an exogenous shock (Arslan & Tarakci, 2019, para. 15; Salamonsen, 2015, p. 1790), like when predatory lending or institutional risk-taking increased to a climax in the housing market prior to the 2007/08 economic crisis. After the collapse of such a system, the resulting social structures include novel or innovative behaviours from community members or within the social structure itself. The (often cyclic) process by which social systems are 'destroyed' and then create new ones, often at micro, meso and macro scales, is called "creative destruction" (Geels & Schot, 2010; Schumpeter, 1943/2003).

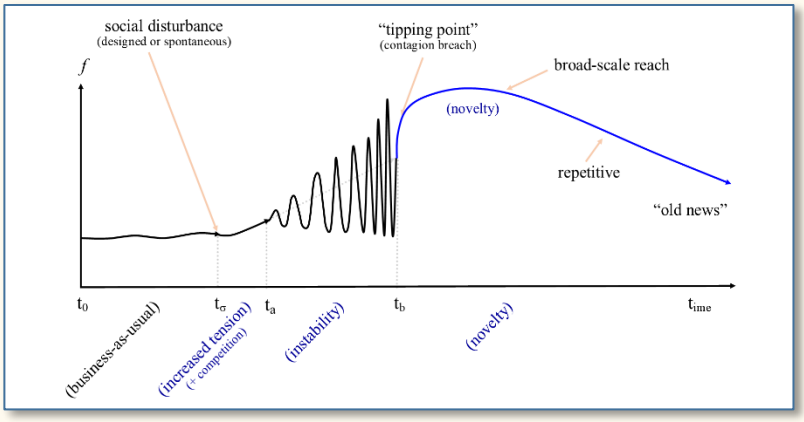


Figure 7. "Tipping Point." Graphic by author.

Governments attempting to mobilize communities quickly toward climate mitigation face considerable challenges. *Punctuated-equilibrium theory* (True, Jones & Baumgartner, 2006) explains the political processes by which stability and gradual shifts typically characterises most policy changes, but in which broad-scaled punctuated shifts do occur. When "bounded" rational decision-making occurs, that is, the decisions that are subject to cognitive limitations (such as rationalism or deterministic thinking), then policy-making choices may be stable but do not include dynamic or innovative possibilities and thus are

[7] A negative contagion effect could also happen, slowing down climate action. See Wolske, Gillingham, and Schultz (2020, p. 202) for further info about peer influence.

[8] Studies have shown that homes can be found with photovoltaic rooftop electricity systems near to each other in geographic proximity, more so than by chance, in what is called "spatial peer effects" (Wolske et al., 2020, p. 203).

[9] See Liu (2011) and Wan and Liao (2018).

susceptible to unforeseen sudden tensions and punctuations. To mobilize communities, political institutions need to find ways to mobilize themselves either through gradualistic or punctuated means toward their own policy change. For example, a government working in a community that stages local protests which demand racial equity etc., needs to undergo radical policy change itself on racial equity if it hopes to mobilize the community toward social harmony. Similarly, a government may choose to mobilize its staff toward climate action and in the process learn how to mobilize a community and scale the mobilization to a whole city.

Credit: The City of Vancouver.

Tipping Interventions

Punctuated change occurs when a tension reaches a "tipping point" (or breach, crisis, bifurcation point, or transition point), which when activated generates contagions of virally spreading behaviours, social norms, innovative technologies, and changes in the social structure (Unrau, 2021). Tipping points can be leveraged as *social tipping interventions* in order to trigger sudden (albeit potentially disruptive) social change. Otto et al. (2020, p. 2354) suggest that interventions may lead a community toward a tipping point to scale up the rate of change toward climate action. To do so, they suggest:

i) Removing fossil-fuel subsidies and incentivising decentralized energy generation (energy production and storage systems);
ii) Building new carbon-neutral cities;
iii) Divesting from assets linked to fossil fuels;
iv) Revealing the drastic implications of fossil fuels (norms and value systems);
v) Strengthening climate education and engagement
vi) Prioritize the disclosing of information on greenhouse gas emissions

Tipping points are reached quickly because of the size and rate of change of the perturbation in the system. In other words, it is the size of a social disturbance (naturally occurring or planned) and how quickly it changes, which determines what triggers communities to self-organize toward novel change.

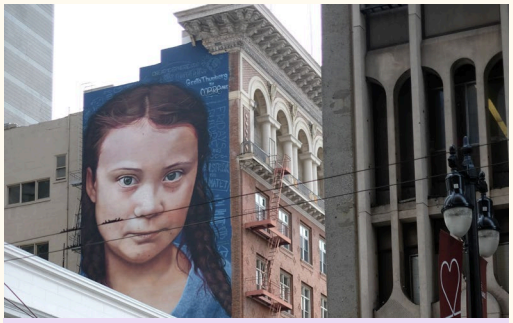
For rapid or broad-scaled change to occur, a certain percentage of the population needs to be "on board" and actively engaging in the new policies or actions toward climate mitigation. Chenoweth & Belgioioso (2019) suggest that mass uprisings only need to mobilize 3.5% of the population to succeed in broad-scale collective change (in her context of masses against dictatorships), which is less than critical mass thresholds of 10-25% as is proposed in previous research (Chenoweth & Belgioioso, 2019; TEDxBoulder, 2013). Chenoweth argues that "movement momentum" is the essential ingredient to reach this kind of tipping point change, which is a measure of movement that examines the strength of mass mobilization, or the number of participants in a "movement" of social change, and the concentration of the activities that take place over time (the interaction between movement size and velocity).

Credit: C. Banks, Unsplash.

Mass Mobilization

Mass mobilization that is punctuated in a radical shift over a short period of time occurs in part due to previous tensions, small or large, that leads up to a tipping point. For example, on Oct 27, 2017, Hollywood actress Alyssa Milano tweeted #MeToo and within a few days social media had spread the hashtag across the world, with 85 different countries using it to spotlight sexual harassment and abuse to demand change (Pflum, 2018). However, the hashtag was originally started by Tarana Burke a decade earlier, and in the decades prior, women's movements all over the world had been promoting, publicizing, and challenging the social norms connected to sexual violence.

Greta Thunberg has been cited as starting a global climate movement (Woodward, 2020), based on the fact that in Sept 20, 2020, four million people joined her in the largest climate demonstration in history, amassing people to action from across 161 countries. However, climate demonstrations have occurred throughout history, beginning primarily in the 1990's, including a march of 100,000 people mobilizing climate action prior to the 2009 UN Climate Change Conference in Copenhagen (van der Zee & Batty, 2009). In the current cultural context, COVID-19 represents a considerable social disturbance that holds huge potential for novel or innovative change toward greater health measures. Similarly, the devastating fires of 2021 as an ecological disturbance may not only be a wakeup call for action on climate change, but innovative new possibilities for how change can and will happen.



Credit: A. Altin; M. Descoubes, Unsplash.

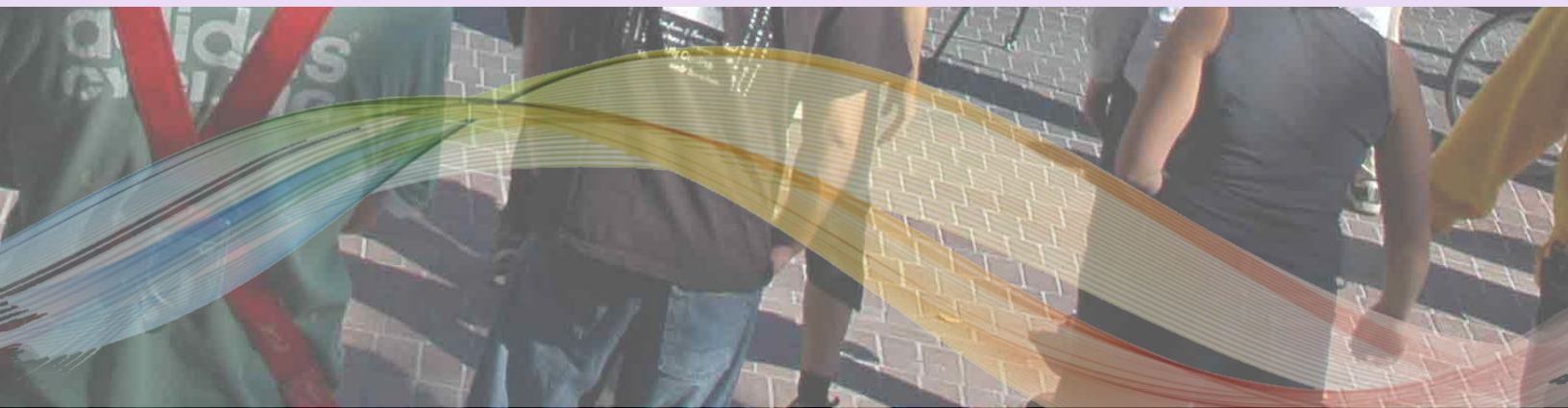
Credit: M. Spiske, Unsplash.

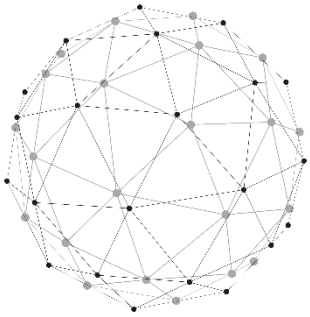
Purposeful Campaigns

Research indicates that social mobilization can be purposefully activated and directed. For example, the 2014 ALS Ice Bucket Challenge was one of the most successful and far-reaching viral online social causes (van der Linden, 2017, para. 1). Videos of people dumping cold water on their heads were watched over 10 billion times and encouraged 28 million people worldwide to join the effort by donating $115 million USD to the campaign. Since viral mobilization spreads through an existing network, a contagion chain of social contacts can connect people through a "six degrees of separation" scenario (Alstott, Madnick & Velu, 2013, p. 2). Some key themes of "viral altruism," or punctuated social change, indicate successful popular social causes that go viral are due to six (6) well-established psychological leveraging strategies that van der Linden (2017, para. 5) calls SMART campaigns: 1) social influence processes (S); 2) a moral imperative to act (M); 3) inspire (positive) affective reactions (AR); and translate and convert social momentum into sustained real-world action (T). A study was done by Alstott, Madnick, & Velu (2013) on social mobilization using a contest to see how quickly information and action could spread, and concluded that females mobilize each other faster than males, and young parents and older children display faster mobilization than their opposite (p. 8). Broad-scaled or mass mobilizations are possible, but making them sustainable toward behavioural change is important for their long-term success.

In summary, "punctuated" social change can and does happen effectively, and may be accomplished through social tipping interventions in a society. SMART campaigns, along with strong policy implementations such as removing fossil-fuel subsidies or increasing incentives toward heat pumps or electric vehicle (EV) purchases, may complement each other toward using any substantial "perturbation" in the Vancouver context to mobilize individuals toward climate action. However, such interventions need to be based on a previously established and strong social network, calling forth the role of social capital in such change.

Research Approach





Research Approach

This Report covers two main areas of research: a theoretical and analytical background of social capital and community mobilization, and an empirical analysis of social capital from secondary sources. The Report addresses these two areas through four research approaches: 1) a literature review and analysis; 2) the creation of a Framework for social capital; 3) an Analysis of social capital measurement in the Vancouver context; and 4) a theoretical analysis of social capital's relationship to community mobilization. The Report finishes with recommendations for future governmental action.

Research Objective

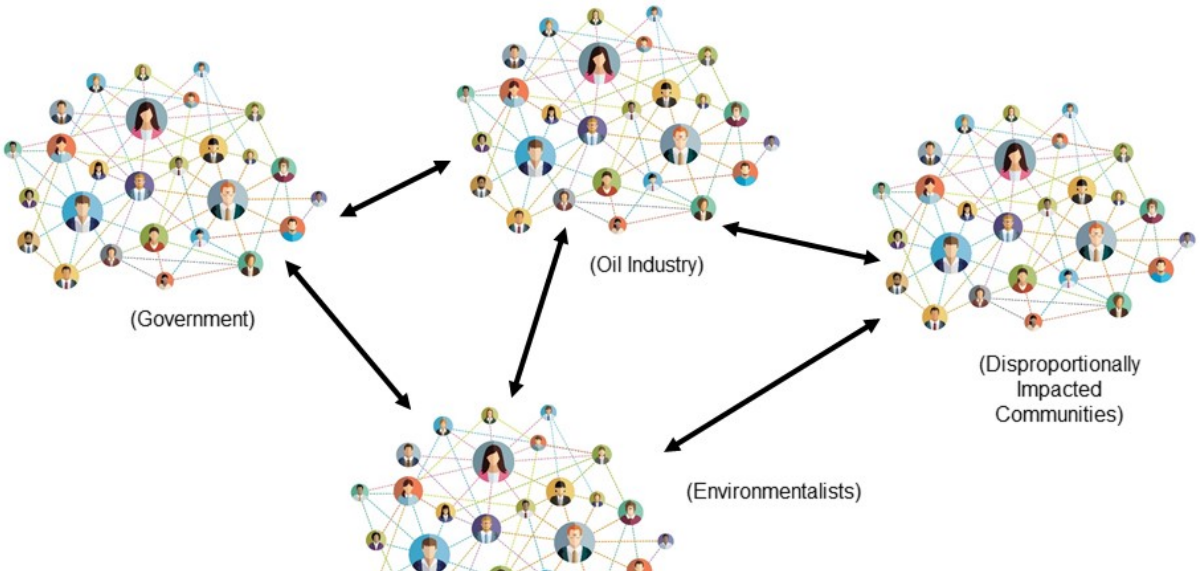
The objective of this research was to develop a framework to measure social capital in Vancouver, and specifically how social capital relates to community mobilization of climate action. The project builds on previous regional data available and identifies potential metrics and indicators of social capital to develop a measurement framework that includes bonding, bridging and linking social capital in Vancouver.

This was accomplished through two main deliverables. First, a spreadsheet document (known herein as the **Analysis Spreadsheet**) that complied social capital data and measured trends across time in the Vancouver context. The Analysis also includes some initial mobilization data and indicators, and correlates the data to the social capital data, to allow for a suppositional understanding of how social capital relates to mobilization.

The second deliverable is a document (known herein as the **Report**, i.e. this document) which generates a theoretical Framework for future social capital definition and measurement, an analyses of the background literature, an analysis of the measurement data and trends, and finally recommendations for COV policy and action.

Three Main Objectives:

1. Develop a Framework for measuring social capital in the city of Vancouver based on gathered research;
2. Identify potential sources of data and where possible, collect and gather the data and begin to build a picture of social capital strength in Vancouver;
3. Identify opportunities for COV to build social capital, particularly the areas and groups where the City can build stronger relationships in order to build the movement for climate action.



Methodology[10]

This report takes on a mixed-methods approach, as per the two areas of research described above and below.

Theoretical Considerations and Analysis

To build a theoretical framework for social capital, this report uses a multi-methodology of both conceptual and theoretical analysis (Jasso, 1988; Kosterec, 2016). While including quantitative research as a theoretical foundation, speculative, correlational, and qualitative methods are considered to draw deductions. The Framework also incorporates elements of transdisciplinary research (Nicolsecu, 2007), participatory research (McIntyre, 2008), complementarism (Flood, 1990), critical consciousness (Freire, 1974/2005), critical race theory and intersectionality (Crenshaw, 1991).

Data and Measurement

The data on social capital was gathered and processed using a mixed-methods approach to quantitative and qualitative analysis. The following methodological contexts were considered, as used in the Analysis Spreadsheet (all details of data measurement is recorded in the Analysis Spreadsheet. Any data in this Report is a summary only of the Analysis document):

a. Source: All data collected and analysed was from a secondary data source, and largely quantitative (noted below). A source was considered valid if it could be an answer "yes" to these questions:
   - Is this source the result of a substantive empirical process?
   - Can this source be tracked to a previous temporally linked dataset?
   - Does this particular source offer Indicators that align with the Social Capital Framework Indicator Types ("Buckets"; see below)?
   - Does the source offer Indicators that are not deficit-based?
   - Does the source offer Indicators that promote the understanding of disproportionately impacted communities?

   Original (raw) data was used except where not possible, in which case analysed data was used. When the source was observational (i.e. "direct" from staff at COV who recorded the data personally), a qualitative analysis approach was used.

   See Appendix A for a list of the data sources. Please note: the data providers should not be considered responsible for data usage, display, or any errors caused from its analysis or use.

b. Time: Data was sourced if it could be temporally correlated and measured for trends over time. A ten year gap was preferred when possible; however, most data had a five year gap. Three year gaps were included but represent a minor portion of the data. Some data was greater than a ten year gap, and if so was included for reference (only). Other data was included that had no temporal linked set but was included for reference (an example of this was the 2019 Greenest City Action Plan Survey, which had no temporal comparison).

c. Scale: Social capital research acknowledges "levels" of social capital, as a micro, meso, and macro approach to scale (Franke, 2005, p. 1; see also Claridge, 2018b, p. 14). The *micro*-level covers individual or family behaviour like cooperation; the *meso*-level covers social structures that enable cooperation, such as group dynamics like collective action; and the *macro*-level covers the systemic conditions for cohesion through acted upon social and political structures. This Report and Analysis considers all three, and generally reports from micro to macro.

d. Size: Survey sample size was based on the previous secondary analysis. However, when working with raw data, and where relevant, an attempt was to use a sample size based on Statistics Canada norms. This included a margin of error of 3%+/- and a confidence level of 95% (Statistics Canada, 2016b). For example, for Vancouver's population of 631,485 (as per the 2016 Statistics Canada census), the required sample size was 1066 with an assumed response rate of ~70% (Statistics Canada, 2009). Metro Vancouver, British Columbia and Canada sample sizes varied (i.e. as recorded in the "n=" column in the Analysis Spreadsheet).

[10] This section was influenced by Tristan Claridge and J. Carl Ayers.

e. Indicators. This Report and Analysis used Indicators of social capital from two types of data sources. The first type was the data collected from answers to *survey questions*, and second type was data collected from the secondary reports of observational studies (mostly governmental). Indicators were chosen based on the best fit to social capital measurement norms (as per Harvard's "Social Capital Community Benchmark Survey"), as well as the data available with temporal links. A great source was the Vancouver Foundations "Connect and Engage" 2012 and 2017 surveys.

f. Weight: A weighting score was given to each Indicator, as per its value in terms of how "strong" the proxy was to social capital. Indicators that are traditional in the academic literature or from other measuring scales were given a "strong" weight, while less traditional and even only suppositional indicators were given a "weak" or "very weak" weight. The weighting had to do with relevance to social capital, the location where the data was collected (how close to Vancouver it was), and other factors such as the gap between years of collection.

If any data source was already weighted, as in the case of Vancouver Foundation's raw data, the weighted data was chosen rather than original data. For the Vancouver Foundation's 2017 dataset, the weighted metrics were:

- Age (18-34/35-44/45-54/55-64/65+) within Gender
- Area of residence, grouped into Metro Vancouver regions (City of Vancouver/North Shore/Northeast/Southeast/Southwest)

g. Proxies. This Report and Analysis considered all quantitative or qualitative data as a proxy to social capital, divided into five (5) main "codes":

i. SC = a form of social capital (with Strong weight). This might be what some analysts call "true social capital."
ii. PA = a pathway to social capital, or a source of social capital (Weak);
iii. OC = an outcome or consequence of social capital (Weak);
iv. PA/OC = both or either a pathway to social capital and/or an outcome or consequence of social capital (Somewhat strong / Somewhat weak);
v. GV = a Government initiative (which could be a pathway to or an outcome of social capital).

h. Hypotheses: When social capital Indicators did not have a Strong weight, then a hypotheses rationale was included to justify the usage of that Indicator. This included Indicators that were "Somewhat weak," "Weak," or "Very Weak."

i. Trends: A "Positive" trend was deemed as an increase in social capital, that is, a feeling of more belonging, trust, safety, connected, being informed, or civically active, etc. A "Negative" trend was the opposite, and a "Neutral" trend was one that remained about the same. In general, shorter-term trends were chosen (i.e. a 5yr gap) to be consistent across data, rather than opting for longer-term trends even when available.

j. Significance:[11] For the majority of data with two temporal variables (i.e. an early date and a later date like 2012 or 2017), a p-value was found for a two-sample two-tailed Z-test. This is the probability of observing evidence at least this strong in either direction (increasing or decreasing), under the null hypothesis that there was no change between 2012 and 2017.

When the data was multivariate, a Kolmogorov-Smirnov D statistic was used. This is a measure of how different the cumulative distribution functions of the two samples are, measured as the maximum absolute difference in the cumulative probabilities. If the value of D was greater than the critical value then the two distributions were considered "significantly" different.

When the data was drawn from non-sample size correlations, such as the # of grants given out in a given year (and not corresponding "out of total grants"), then a simple percent change was analysed through a qualitative judgment on whether that percent change was "significant" with respect to the resources that went into the grant approval and disbursement.

The ASA panel defines the P value as "the probability under a specified statistical model that a statistical summary of the data (for example, the sample mean difference between two compared groups) would be equal to or more extreme than its observed value." See: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5017929/

[11] This section was particularly influenced by J. C. Ayer.

Analysis

With the predominant volume of quantitative data sources along with some marginal quantitative analysis (i.e. “Significance” value), care was taken to *not to draw causal conclusions* based on the quantitative results only. Thus, a qualitative approach to analysis was taken. It has been noted that social capital research is strengthened when both quantitative *and* qualitative approaches are taken, by minimizing single-method bias and complementarizing the weakness of one approach by compensating with the strengths of the other (Dudwick et al., 2006, p. 2). This allowed for a reduction in a causal and paradigmatic worldview bias (see “Equity and Worldview Bias”) of being overly functionalistic. It also allowed for greater equity, because narratives of the current cultural climate were considered when making summative statements (i.e. like how the data might be perceived by populations disproportionately impacted by traditional research methods).

Assumptions

There were several assumptions made during this theoretical and analytical research.

The main assumption was that social capital can be measured. As previously discussed, social capital is an observational evaluation of human connection and reciprocity in non-causal linkages that is subjective to the communities and the researchers in the study. As such, proxies were used for all Indicators or metrics of social capital that point to Indicators of human experience.

Another key assumption was that quantitative data can express the lived experiences of respondents. A critical investigation of this assumption challenges privileged notions of quantitative research in statistics. Quantitative analysis assumes symbolic logic and causal determinism in favour of qualitative and subjective observation. Objective analysis of subjective experiences can limit and conflate a pluralistic diversity of human experience into homogenous wholes or reductionist “parts.” And yet, deterministic thinking has improved our lives (for instance in weather prediction; Lorenz, 1972) and are very useful depending on their use and the phenomena studied. Thus, a complementarist approach, which picks the best features of objectivistic data complementary to a subjective perspective, was used for this study to reduce the privileging of one paradigmatic approach versus another, especially ones that are hierarchical and exclude heterarchical possibilities. Therefore, any correlative statements of quantitative or qualitative analysis are seen for their heuristic value rather than of deterministic value, to avoid hidden presuppositions that may carry unseen discrimination.

Limitations

There were several limitations to the theoretical and empirical analysis of this study.

1. Time. The topic of social capital is vast, well represented in the literature, and under considerable discussion. To comprehend the topic of social capital and its measurement fully is to take on a considerable task. This study, although an excellent project for COV and its community mobilization initiative, was four (4) months part-time and therefore limited in breadth of being able to understand and contextualize the full scope of social capital types, dimensions, and functions, as well as being able to build a fully encompassing metric and framework on how to measure it.
2. Secondary Research. A measurement on social capital should, in an ideal way, include primary sources of data along with secondary sources. Participatory action research, in collaboration with diverse community representatives of different populations in the municipality, would have ideally been used with partners in a full democratic process toward understanding trends of social capital in Vancouver.
3. Quantitative Research. While the majority of data was quantitative, a qualitative analysis research approach was taken to be inclusive of a mixed-methods approach. Primary research done with qualitative methods would be appropriate for future consideration. A list of qualitative research methods is included in the Analysis Spreadsheet in the MAIN and MAIN-Mobi tabs (further to the right of the summaries) to remind researchers of possible qualitative methods. Please see Appendix B, for a list and introduction of possible qualitative community-based research methods.

4. Sources of Data. There were considerable challenges in finding data that could be temporally linked over two datasets. The Vancouver Foundation's excellent Connect and Engage surveys from 2012 and 2017 were based on themes rather than temporal comparisons,[12] and thus, only a small portion of the surveys could be used. Similarly, data collected via other survey processes through COV had only a few sources of data that were temporally linked. Statistics Canada represents the greatest source for comparative data, but when localized to the Vancouver context, data was less immediately available.

   As such, some Indicators that were ideal for social capital research could not be tracked over time. However, some survey questions found were great Indicators for social capital and as single data sources were placed in the Analysis Spreadsheet but without their temporal counterpart. "Empty" cells were entered in coloured light-red so that analysists in the future would know where to add new data in the Spreadsheet so that the indicators could be temporally linked and thus tracked for trends.
5. The Community Mobilization Process. Part of the research goal was to study the relationship between social capital and community mobilization. As the COV community mobilization project is current and still in process, including defining the concept and its measurability, the research of this project was still in process, making part of it a "living" project rather than one with static research sources.
6. Covid-19. The coronavirus pandemic created limitations in regards to in-person research and connectivity to the local team.

Credit: The City of Vancouver.

[12] As described in an email with the Mustel Group.

A Social Capital Framework

A Social Capital Framework

In order to understand how a social capital may impact community mobilization toward climate action, a Framework to Measure Social Capital is presented here. The Framework is a theoretical *guide* on how to approach measuring social capital, and does not include the result of data analysis (see the next section called, "An Analysis"). A theoretical framework can be defined as a conceptual structure of ideas about socio-psychological processes that work across levels (i.e. descriptive or analytic) in an attempt to understand collective experience (Anfara & Mertz, 2006). A *Social Capital Framework* incorporates multiple concepts and/or theories to assist in structuring an idea-space for a new theoretical and empirical understanding of what social capital is, how it can be measured, and how it can be correlated to the mobilization for climate action.

The project of designing a Social Capital Framework looked to answer these questions:

1. What is social capital and can it be measured to paint a picture of its strength in Vancouver?
2. Where and/or how can the City of Vancouver build social capital to generate community mobilization toward climate action?

Goals of the Framework

Several goals were established as to what the Framework would accomplish:

- Define the term "social capital" for the City of Vancouver context;
- Be mindful of inequities and worldview bias, and incorporate active strategies to reduce both;
- Create metrics which can locate, understand correlates to, generate indicators for, and be tools of measurement and analysis of social capital;
- Result in a quantitative and qualitative approach to measuring and analysing social capital;
- Build a "picture" of social capital by considering trends over time, so that opportunities may be found to continue to build social capital;
- Offer suppositional correlations of social capital to the mobilization of climate action;
- Generate new indicators for social capital, mobilization, and the intersection of where social capital and mobilization meet.

Defining Social Capital

Defining the term "social capital" has been contested for decades, for substantive and ideological reasons (Claridge, 2018b, p. 11; Dolfsma & Dannreuther, 2003; Foley & Edwards, 1997; Adler & Kwon, 2002). As a result, there is no singularly agreed upon definition in the literature. It has been suggested that, as it is used here, social capital is an "umbrella" term that includes multiple variables of social cohesion, inclusion, wellbeing, and connectedness, as well as the resources or networks that leads to these variables and incites individuals and communities toward collective and purposeful action.

A thorough literature review of different definitions was completed (summarized in part in the previous "Overview" sub-section), and a survey about the term was completed to engage in a participatory model of decision-making. See Appendix C for a deeper background of previous definitions of the term, and the survey results, in preparation for the below definition. Appendix D is the actual survey itself.

A Definition of Social Capital

Drawing deeply from the academic literature and the findings of the survey, the proposed short-form definition of the Social Capital for this Framework is: "Social capital is the social network, the assets, and the systems of meaning around trust, cooperation, and social norms in that network that may be mobilized in purposive action toward mutual benefit" (Nahapiet & Ghoshal, 1998, p. 243-244; Putnam, 1993, p. 35; Lin, 2001, p. 12).[13]

This definition addresses several dimensions of social capital. First, it sees social capital from a *structural dimension*, by seeing it as the *network* between individuals in a group (i.e. "connections"). Next, it sees social capital from a *relational dimension*, by treating it as the behaviours or relational resources or "assets" that a person or group can acquire from the network between individuals in a group (i.e. "what they gain…"). Examples are given: trust, cooperation, and/or the social norms that keep people accountable to their trust. Lastly, it sees social capital from a *cognitive dimension,* by acknowledging the systems of meaning (i.e. "shared values") that people bond or bridge people together over shared understandings.

See the adjacent text box for a contextualization of the above definition for the general public or media.

> ***"Social capital is the connections and shared values between people, what they gain from such connections and values such as norms of trust and cooperation, and the resulting behaviours and purposeful actions that are beneficial for the group."***

[13] The long-form definition would be: "Social capital is the sum of the actual and potential resources or assets that can be derived from the network of relationships between individuals and the social unit, the actual network of connections itself, and the beliefs or systems of meaning among parties, of the trust, cooperation, and social norms that may be mobilized in purposive action toward mutual benefit" (Nahapiet & Ghoshal, 1998, p. 243-244; Putnam, 1993, p. 35; Lin, 2001, p. 12). The three forms of this definition (short, long, and general) are meant to be contextualizing for different people's needs and interests. Like stacking dolls replicating each other of different scales, the general definition is meant to be the most accessible to general readers, the short-form the next most accessible, and the long-form for academics and statisticians.

The Six Indicator Types ("Buckets") of Social Capital

To find social capital in any society, community, or group, this Framework divides the indicators of social capital into different Types. Drawing on the qualitative research approach of Dudwick, et al. (2006), the Framework proposes these Types cover a spectrum of social capital as it can be applied from personal to social experience. For example, a "sense of belonging" can be seen as the personal experience of a social system, while political action can be seen as the social experience of a personal system of beliefs. By allocating social capital into six (6) Types (colloquially known as "buckets"), an easier location for social capital may be found across multiple data sources, geographies or communities within any social group that is of interest.

It should be noted, however, that the six (6) Indicator Types are *not separated* by clear distinct boundaries, but represent a *spectrum* or web of interconnecting concepts and ideas. In this view, political action is *not separate* from a sense of belonging.

#1

Personal Networks & Social Connectedness

This Indicator Type of social capital identifies the personal networks between people to see if they feel connected to their friends, neighbours, and themselves, and examines if those connections are diverse.

#2

Social Cohesion, Inclusion & Trust

This Type looks at the relational behaviours between friends, neighbours and communities, and examines if people feel like they belong, trust each other, and feel safe. It looks at diversity and if people bridge outside of their network to groups they don't know.

#3

Social Health (personal, communal, environmental)

This Type looks at social health, which is described here as the physical, communal and environmental determinants that (could) lead to a healthy social life. While the phrase "social determinants of health" describe social conditions that lead to health and well-being, this approach implies the opposite: health determinants that lead to social well-being (See Miringoff & Opdycke, 2008/2015, p. 70; Hahn et al., 2010, p. 1036; Umberson & Montez, 2011, p. 2).

#4

Community Engagement & Collective Action

This Type examines people's engagement in their communities towards purposive action, by attending community meetings, volunteering, and climate action initiatives. It also looks at ways the local government (COV) supports these efforts.

#5

Information & Communication

This Type looks at learning and communication, to see if there are pathways of information by which communities may make informed decisions. It also looks at ways the local government (COV) supports these efforts.

#6

Empowerment & Political Action

This Type looks at the ways in which communities engage in purposive action toward a communal or political change that might make their lives better. It also looks at ways the local government (COV) supports these efforts.

How to Measure Social Capital

Measuring social capital has its challenges. Many theoreticians argue it cannot be observed directly, its measurement depends on a credible definition that is tied to theory, and its indicators need to be proxies of established quality (Claridge, 2018b, p. 35). A high degree of validity in measuring social capital is uncertain, and it many regards it should not be: a causal and deterministic approach is reductionistic and negates subjective complexity. Thus, this Framework specifically takes a qualitative analysis approach to quantitative sources, as it proposes that analysis should not be quantitative alone. It also encourages qualitative research methodologies for data collection, particularly ones that are participatory with the communities to be studied. See Appendix B for an overview and examples of qualitative research methods.

See the adjacent text box for a Metric for generating Indicators of social capital. The Metric is a method to guide research when generating Indicators for social capital measurement. Instead of establishing criteria for measurement, the Metric proposes categories of questions based on social capital Levels, Types, Dimensions, Functions, and Input/Outputs,[14] to guide researchers in ensuring the possible indicators are adequately applied to theory.

The Methods of Analysis

It is the proposal of this Framework that researchers consider the same methodologies as described in the Methodology section of this Report. Consider the theoretical implications and a possible multi-methodological approach to reduce assumptions about causal linkages, reductionistic aggregates of diverse groups, beliefs of non-interconnectivity, and worldview structures that are limited to a single paradigm. See the Methodology section, and follow it as a guide to select the elements important in deciding methodological processes of analysis.

[14] Social capital "Levels" refers to the micro, meso, and macro levels of measurement, which are individual, group, and societal in nature (see the "measurement" section). The Types are as per above, in the "Indicator Types" section. Dimensions refer to relational, structural, and cognitive "dimensions" of social capital. The Functions are bonding, bridging, and linking social capital (as described here). The Input/Outputs are Pathways or sources to social capital or outcomes and consequences of social capital.

A Metric for Generating Indicators of Social Capital

After a definition of social capital is established, begin to generate survey Questions or Indicators of social capital based on the below categories of questions:

a) Social Capital Levels:

Is the Question or Indicator about individual or family behaviour, group collectivity like cooperation, or the broader social and systemic conditions in society (i.e. the community or nation)?

b) Social Capital Types:

Is the Question or Indicator about peoples':

1) personal networks and their sense of feeling connected (#1)?
2) their feeling Included, trusting, and safe (#2)?
3) their personal and communal health, as well as connection to the environment (#3)?
4) their engagement with their community and capacity to cooperate (#4)?
5) their feeling resourced with information and communicate easily with their neighbours and government (#5)?
6) their sense of empowerment and collective action toward political change (#6)?

c) Social Capital Dimensions:

- Does the Question or Indicator inquire about the Structure or Network of the person or group?
- Does the Question or Indicator inquire about the Relationships and the Resources those relationships bring to the person or group?
- Or, does the Question or Indicator inquire about the systems of meaning, shared values and beliefs?

d) Social Capital Function:

- Is the Question or Indicator about how well the person or group *bonds* with others that are similar?
- Is the Question or Indicator about how well the person or group *bridges* over dissimilarities to other individuals or groups that are unknown to them?
- Is the Question or Indicator about how well the person or group *links* to others in different levels of power than them, such as higher/lower social structures of authority like the government?

e) Social Capital Inputs/Outputs (Proxy Codes)

- Is the Question or Indicator a *source* or *pathway* that *leads* to social capital?
- Is the Question or Indicator a *form* of social capital (i.e. like about trust, or political action?)
- Is the Question or Indicator an *outcome* or *consequence* of social capital?

If the Question or Indicator is a Pathway (PA) to social capital, or is an Outcome (OC), these questions/indicators could be weighted as "weak" in value to actual social capital.

Defining Community Mobilization

Community Mobilization as a process of public activation and communal change has been used for centuries. In British Columbia in 2010, a previous report on how to mobilize communities for climate solutions was developed through a series of workshops (Pacific Institute for Climate Solutions, 2010). At this time, COV is working on a strategic plan for mobilizing community that includes a definition, pathways, outcomes and indicators of "community mobilization." A *working definition*[15] of the term could be: "community mobilization is the self-organized or City-led movement that effectively engages residents, businesses, and organizations to participate, activate, and transform collectively toward climate action, and specifically fosters the collective action needed to enable bold policy changes (that reflects the scale and urgency of the climate emergency)."

Community mobilization has four key Outcomes: 1) a high level of (climate) literacy amongst community; 2) a community that supports the City of Vancouver to take (climate) action; 3) Broad and diverse leadership and community participation (in climate initiatives); and 4) a strong and diverse network (of climate supporting relationships).[16] Indicators of community mobilization will follow these Outcomes and will be structured based on the activities that support the outcomes.

The COV cannot successfully implement the approved strategic plans of Council on climate change mitigation alone. For City Sustainability objectives to be successful, community support is required in implementing the policy recommendations and thus, community participation is needed in the resulting programs and initiatives (City of Vancouver, 2021 p. 1). It is proposed that when civic engagement is high, or in other words social capital is strong, communities will self-organize toward climate action through citizen-led and collaborative leadership initiatives in support of COV strategic plans to contribute to the recommended outcomes.

How to Measure Mobilization (considering Social Capital)

There has been diverse research on the topic of community mobilization measurement. Previous studies on "community competence" attempted to measure participation, conflict containment, social support, network intensity, and the facilitation of communal interaction (Eng & Parker, 1994; Knight, Johnson, & Holbert, 1991). Previous studies in sociology have included "the strength of social networks as an indication of community cohesion/mobilization" (Cheadle et al., 1998, p. 702). Because community mobilization is about the "movement" of engagement toward something like cohesion or action (in this case climate action), measuring community mobilization is about the relation of that movement from one point in time to another.

The Metric below is similar to the earlier one on social capital, but is tailored to community mobilization. Similarly, the Metric proposes categories of questions based on Levels, Types, Dimensions, Functions, and Input/Outputs, to stimulate new indicators but apply them to backed-up theory.

The Methods of Analysis

Similar to above, consider the same methodologies as described in the Methodology section of this Report, as a guide to select the elements important in deciding methodological processes of analysis.

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[15] Based on the COV Community Mobilization Project Charter, the COV SUS Workshop #3 working notes, the Community Mobilization Workshop #2 Follow-up Survey Questions, the academic literature on community mobilization (particularly Alstott, Madnick, & Velu, 2013, p. 2), and the Pacific Institute for Climate Solutions Workshop (March 11-12, 2010). This definition is *not approved* or finalized, and thus will change over time.

[16] Please note, part of these outcomes are put in (brackets) to gently indicate the difference between climate action specific definitions (with brackets) and broader usages that are inclusive of social factors and thus read similar to social capital (without brackets).

A Metric for Generating Mobilization Indicators

A number of indicators have already been preliminarily created to measure community mobilization, as per a series of COV workshops in the summer of 2021. The below Metric is included here to assist in generating further survey Questions or Indicators about community mobilization based on the below categories:

a) *Community Mobilization Levels:*

- Is the Question or Indicator about individual or family behaviour, group collectivity like cooperation, or the broader social and systemic conditions in society (i.e. the community or nation)?

b) *Community Mobilization and the Social Capital Types:*

- Does the Question or Indicator consider about the communities':
  1) Personal networks and their sense of urgency of the issue?
  2) Feelings of trust towards the government's policies or actions?
  3) Personal capacity to deal with mobilizing for climate action, because of physical or mental health (theirs or a loved one's)? Does it consider the communities' financial health?
  4) Engagement within their community and their capacity to cooperate with others or the government?
  5) Need to be resourced with information and communication from the government about climate action initiatives or otherwise? Can they trust the source of information?
  6) Sense of empowerment and collective action toward political change?

c) *Community Mobilization "Dimensions" (from Social Capital Dimensions):*

- Does the Question or Indicator consider the systemic social structure or the network of the community? That is, do they consider how the climate action policy will change community and/or their whole social network?
- Does the Question or Indicator consider what the community will get out of climate action? That is, do they consider the resources or assets or relationships that will benefit the community?
- Does the Question or Indicator consider the systems of meaning, shared values and beliefs of the community? That is, do they consider the religion or spirituality, political affiliation, or sustainability-mindedness of the community?

d) *Community Mobilization Function:*

- Does the Question or Indicator consider if the community will *bond* closer to people of trust as a result of the policy on climate action?
- Does the Question or Indicator consider if the community will *bridge* toward diverse peoples and groups that are unknown to them as a result of the policy on climate action?
- Does the Question or Indicator consider how well the community will *link* to others in different levels of power than them, such as higher/lower social structures of authority like the government?

e) *Community Mobilization Inputs/Outputs*

- Is the Question or Indicator a *source* or *pathway* that *leads* to community mobilization?
- Is the Question or Indicator a *form* of community mobilization?
- Is the Question or Indicator an *outcome* or *consequence* of community mobilization?

If the Question or Indicator is a Pathway to community mobilization, or is an Outcome, these questions/indicators could be "weak" in value to actual community mobilization, but still relevant.

Measuring Social Capital's impact on Community Mobilization[17]

While there may not be a direct causal link between social capital and community mobilization as in "a community will mobilizing if there is high social capital," there *are ways to correlate* the two to measure overlapping metrics to see if there is analytical value. To measure social capital's impact on community mobilization will require several steps. A conceptual model that considers the cognitive values and social norms around climate action, might include questions such as:

- Are the values and norms related to social capital and climate action consistent through the group being studied? Shared understandings of the cognitive dimension would be a clearer correlation, but social connection of the network dimension would be harder to correlate.

- Is there more consistency of beliefs within norms and values than behaviour? If not, what behaviours might have consistency?

- Are normative evaluations of action necessarily correlative from community mobilization to social capital? If the group is pro-climate action or anti-climate action is irrelevant to social capital because social capital does not have normative evaluation (e.g. social capital can be both "good" where people bond over helping victim survivors, and also "bad" where youth bond in a violent gang).

So, to measure social capital's impact on community mobilization, the first step might be to establish three dependent variables:

1. Is the respondent pro-climate action or anti-climate action? Generate an indicator as such, and link that with any social grouping (i.e. a geographic community connected by a postal code, or, an online community connected by a website or game).
2. In the chosen social grouping, is the nature of social capital strong, weak, or consistent with the shared understandings?
3. Analyse the relationship between the above two: is there a consistent norm of strong social capital and high rates of climate action?

Such dependent variables would not take into consideration other factors as described earlier, and thus, any correlative conclusions would be "weak" in their weight toward establishing if social capital can impact community mobilization toward climate action. Still, a primary research study of this nature would bear fruit about making correlative links. The current study, however, was based on secondary research data only, and thus, the appropriate data was not available for such an investigation at this time.

Credit: D. Meyers, Unsplash.

[17] This section was particularly influenced by Tristan Claridge.

An Analysis of Social Capital in Vancouver

Credit: M. Harlynking, UnSplash.

An Analysis of Social Capital in Vancouver

Vancouver has a population of 631,486 (2016 Statistics Canada census) with a metropolitan population of 2,463,431 (Statistics Canada, 2016a), and has been consistently listed as one of the top five cities in the world in regards to livability and quality of life (Taylor, 2019). However, multiple sources have claimed that Vancouver has a high level of social isolation (Vancouver Coastal Health & Fraser Health, 2019; Elmer, 2018; Lubik & Kosatsky, 2019; Vancouver Foundation, 2017)[18] and that isolation is increasing, calling for greater interest in understanding the context of connectedness and social capital in the city.

Multiple efforts to measure social capital or its variant forms in Vancouver have happened in the past. Several notable ones are Vancouver Foundation's *Connect and Engage* surveys of 2012 and 2017, the COV's *Healthy City Strategy* (2015) that includes "cultivating connections" as one of its goals, *My Health My Community* (2014, p. 5) in its measurement of "community resiliency,"[19] and a previous Healthy City Scholars Program student in 2017 who wrote "Supporting the Development of a Social Connections Movement in Vancouver" (Heggie, 2017). See Appendix A for a list of sources for the accompanying Analysis Spreadsheet and the below summary.

This section of the Report is a summary of the Analysis Spreadsheet, only a very few selected indicators and their measurements were chosen to be displayed. Please see the accompanying Analysis Spreadsheet for full data measurements, correlations, trends and details. Please see the "Methodology" section for specifics on measurement and data analysis.

Credit: The City of Vancouver.

[18] According to Vancouver Coastal Health & Fraser Health, the City of Vancouver has a social isolation index of 6.3%, or the population percentage of those with "zero" people of trust in their network that they could "confide in, tell their problems to, or call when they really need help" (2019, p. 4).

[19] Administered by a partnership between Vancouver Coastal Health, Fraser Health, and the eHealth Strategy Office at the University of British Columbia, initiated in 2013.

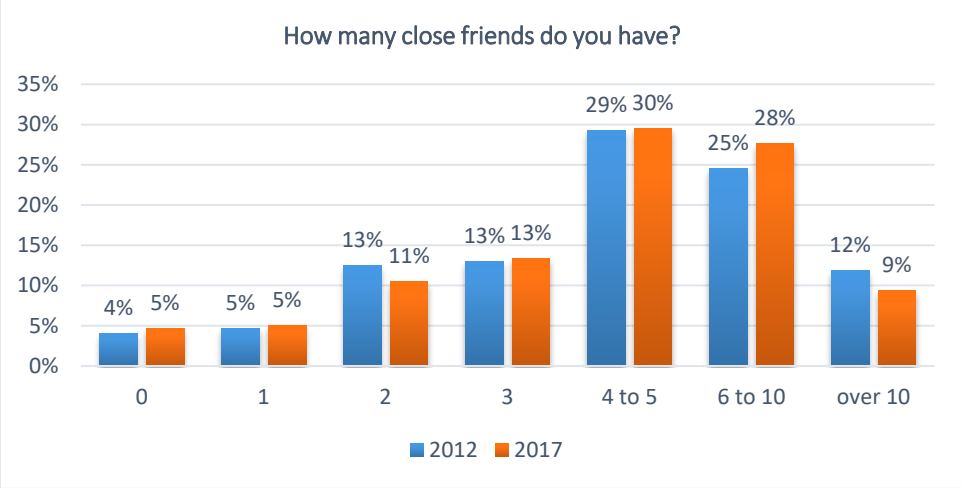
Trends of Social Capital Indicators (per Type)

The following section is divided into the six (6) Indicator Types of Social Capital ("Buckets"), along with the summative qualitative statements that reflect the data for each Type. Also included are (selected) statistical graphics that highlight several indicators for social capital within that Type, as well as statements that reflect notes of consideration.

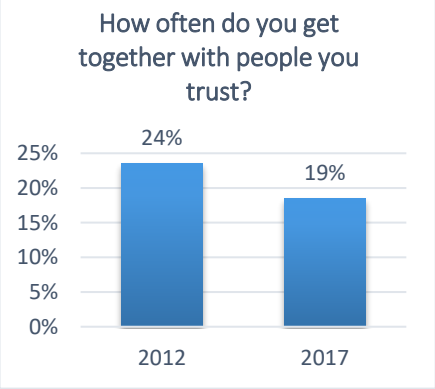
* Please note, the below represents only a small portion of the analysed data. All graphics are original, and based on Vancouver (only) data, unless otherwise noted. See the Analysis Spreadsheet for other indicators and details.

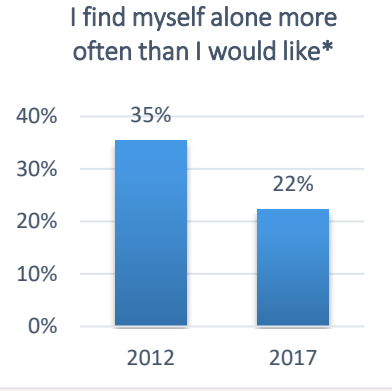
1. *Personal Networks and Social Connectedness*

"People have about the same # of close friends, but are getting together with them less than previously, and seem to like being alone more."



* Note the % of the population that has "0" friends. Such data is used in describing the % of population that is "isolated" (Vancouver Coastal Health & Fraser Health, 2019, pg. 4).

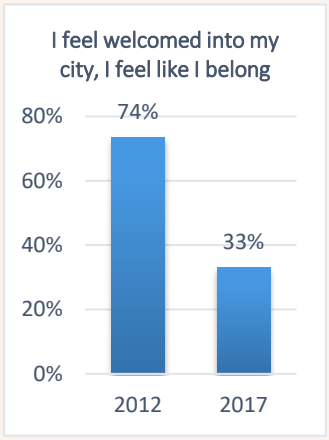


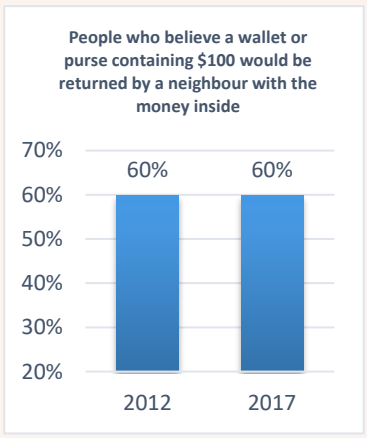


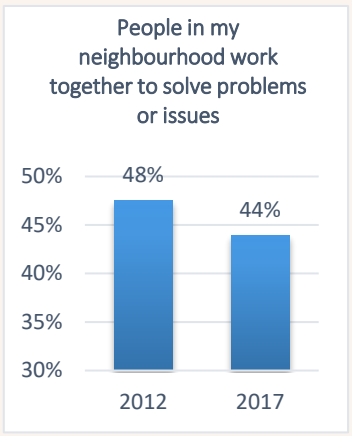
* The second graphic seems to show a decrease in people finding themselves alone more often than they like. However, it could be read that people may be *wanting* to be alone more often, for unknown reasons that could be attributed to physical or mental health, for example.

2. *Social Cohesion, Inclusion & Trust*

"In general, people feel less welcomed or like they belong than previously, and don't feel like their community works together on problems as much, but trust each other about the same."

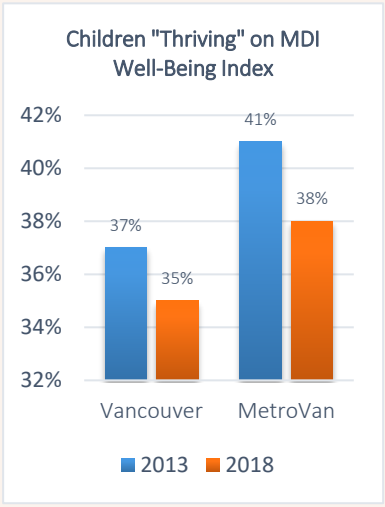


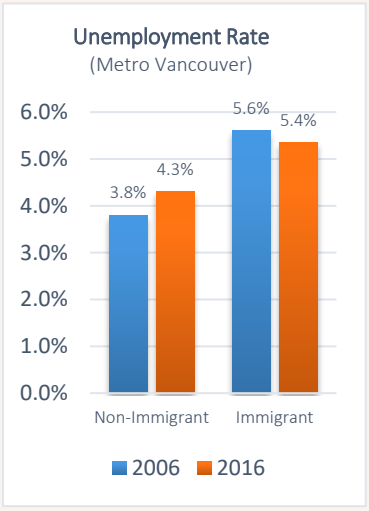


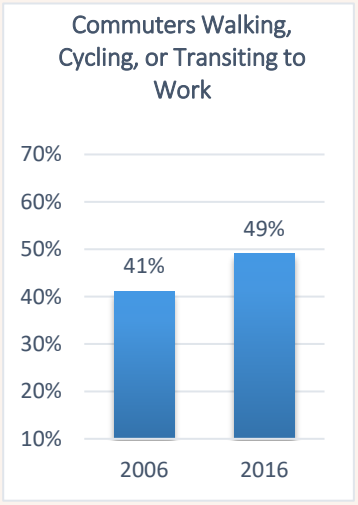


3. *Social Health: Personal, Communal & Environmental*

"In general, less people are thriving (mentally, physically) than previously. However, communities are thriving financially more and are taking actions to help the environment a little more."



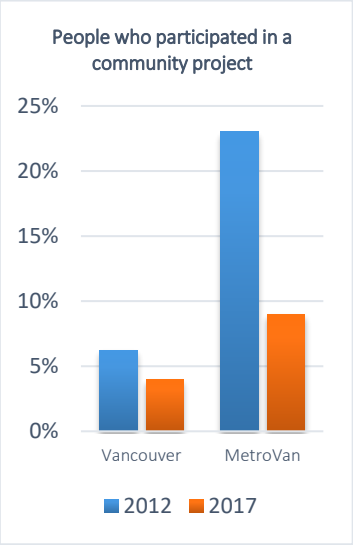


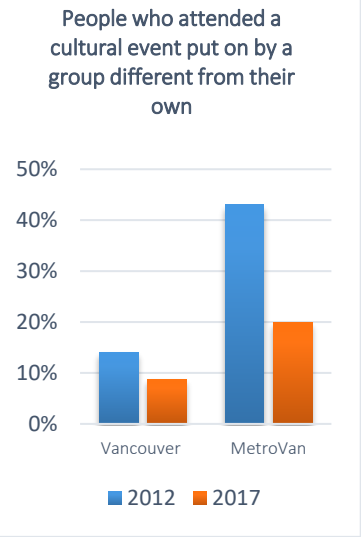


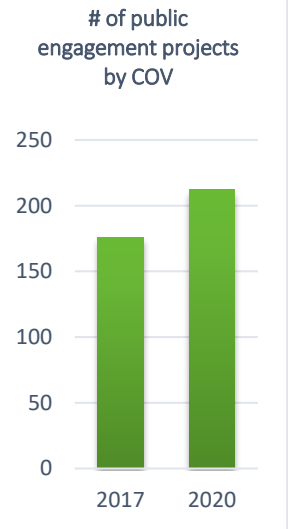
* It is important to note that the unemployment rate for Immigrant populations went *down* between 2006 and 2016, implying that more immigrant populations were finding work. Unemployment rates were for Metro Vancouver.

4. *Community Engagement & Collective Action*

"People are engaged less in their communities, and reaching out less to diverse communities. Meanwhile, generally COV is slightly increasing their pathways to social capital (through supporting projects)."

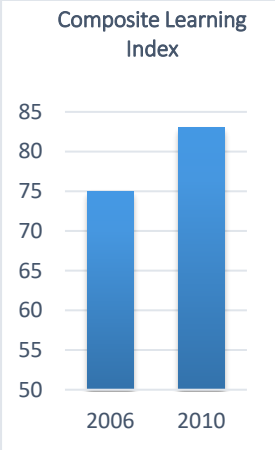


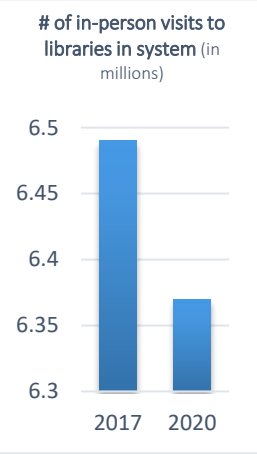


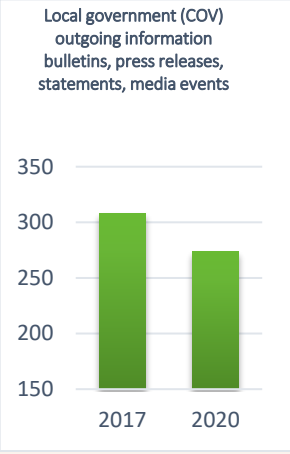


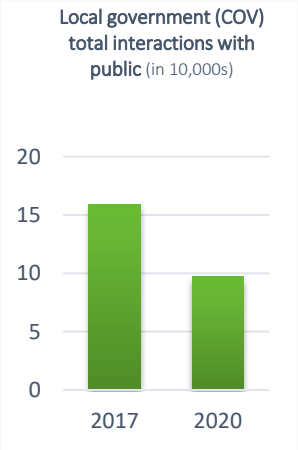
5. *Information & Communication*

"Even though people are visiting the library less, they have a higher learning index than previously. Meanwhile, generally COV hasn't changed significantly the amount of communication or interaction with the public (based on the selected data)."





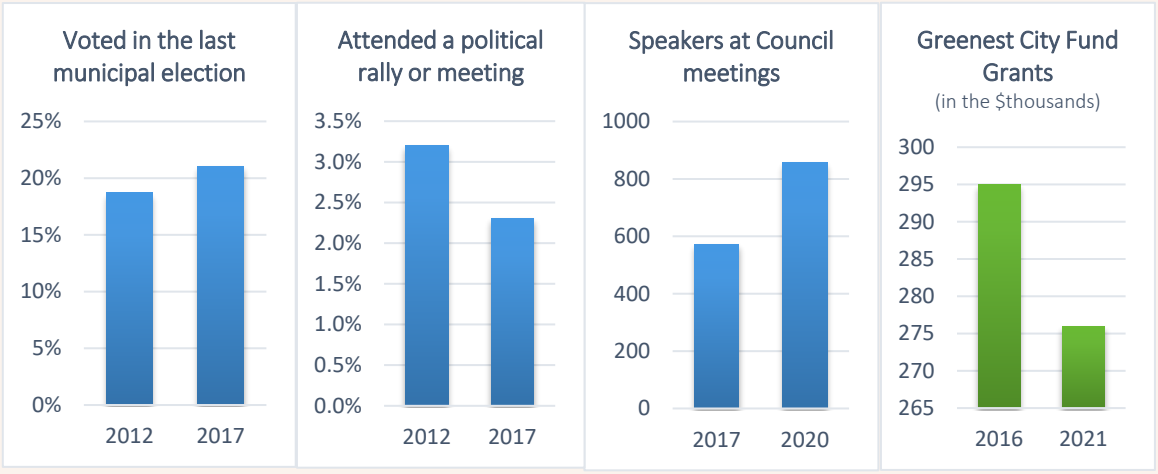




* It is worthy to note that in the right two graphics, COV is communicating less with the public; however, other data may round this out to be more neutral overall.

6. *Empowerment & Political Action*

"In general, people are slightly more engaged in political action than previously. Meanwhile, generally COV has increased their support of social, cultural, and environmental efforts through granting than previously."



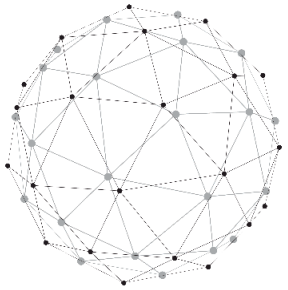
* It is worthy to note that in the right graphic, COV has given less Greenest City Fund Grants; however, they are increasing the total social policy grants ($8.6M to $10.5M from 2017 to 2020) and the total community economic development grants ($800K to $850K from 2017 to 2020) among others to create a slight positive trend in general.

Credit: N. Strehl, UnSplash.

An Analysis of Mobilization & Social Capital

Connections

Credit: J. Vicente, Unsplash.



An Analysis of Mobilization & Social Capital Connections

The City of Vancouver is still working on creating a framework to measure Community Mobilization, and thus a quantitative data analysis of mobilization is not possible at this time. However, this section will analyse how social capital can connect to the current Outcomes and Indicators of community mobilization from a qualitative, suppositional and correlative perspective.

Indicators of Mobilization, Climate Action and Social Capital

Below are the four (4) current Outcomes of Community Mobilization at the COV. Within each Outcome are three sub-sections that suppositionally relate community mobilization to social capital. The first sub-section for each Outcome is a Qualitative Summary Statement that relates the current social capital trends to climate action data (primarily from the 2019 Greenest City Action Plan Survey). These Statements come from the Analysis spreadsheet (the MAIN-Mobi tab), which tracks these trends and the climate action indicators into groupings according to the Outcomes, and aligns them to the Social Capital Indicator Type categories ("Buckets"). The Statements give an overall sense of how social capital relates to that Mobilization Outcome.

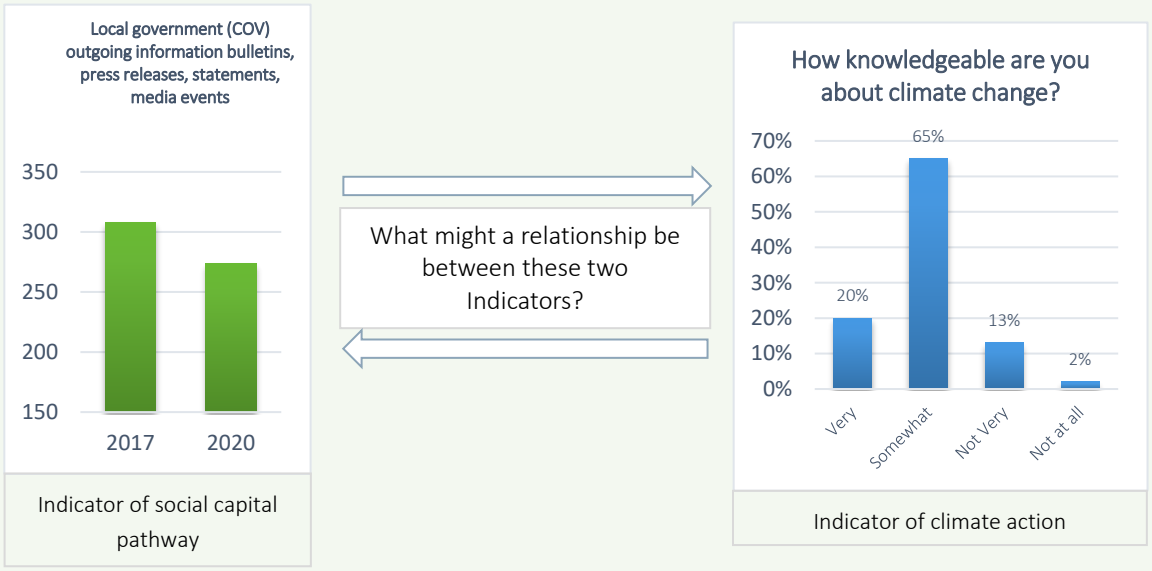
The second sub-section shows a few Indicator graphics of both social capital and climate action. In between the graphics, a question is posed for the reader: "What might a relationship be between these two indicators?" A possible answer is summarized below: "A relationship might be…" The summaries are subjective connections, and are *not* deterministically causal; however, they do bring context to the topic of how social capital is related to climate action. The possible answers are hypotheses only.

The third sub-section is a chart of Indicators. On the left side (in black text) are current indicators as generated from the COV CEAP team during a series of workshops on Community Mobilization in the summer of 2021. The purple text are indicators generated specifically for this Report, as possible ideas for CEAP to use in their future measurements. On the right side is a list of possible indicators that might measure community mobilization but within the context of social capital. They are also generated specifically for this Report, and might be usable for future surveys or data analyses.

* Please note: Part of the Outcome is displayed (in brackets) to draw attention to how social capital is linked to mobilization (e.g. part of the outcome "strong + diverse network" really aligns to social capital messaging, while "of climate supporting relationships" aligns to climate action messaging only). This is to highlight the proposition that to have a climate supporting relationship there first needs to be a strong + diverse network (i.e. with greater social capital, the chances increase that the network will be a climate supporting network).

1. A High Level of (Climate) Literacy Amongst Community

"While people are very concerned about climate change, they do not feel very knowledgeable about it (and go less to the Library), and trust scientists or academics rather than the local government for information. Meanwhile, COV overall seems to not have changed their communication with the public much (based on selected data)."



*** A relationship might be** (hypothesis)**:** If the local government (COV) increases their communication (outgoing and ingoing) about climate change (from a social capital perspective), then respondents might feel more knowledgeable about climate change. While this relationship may seem obvious, such correlations are not always so clear, as seen below.

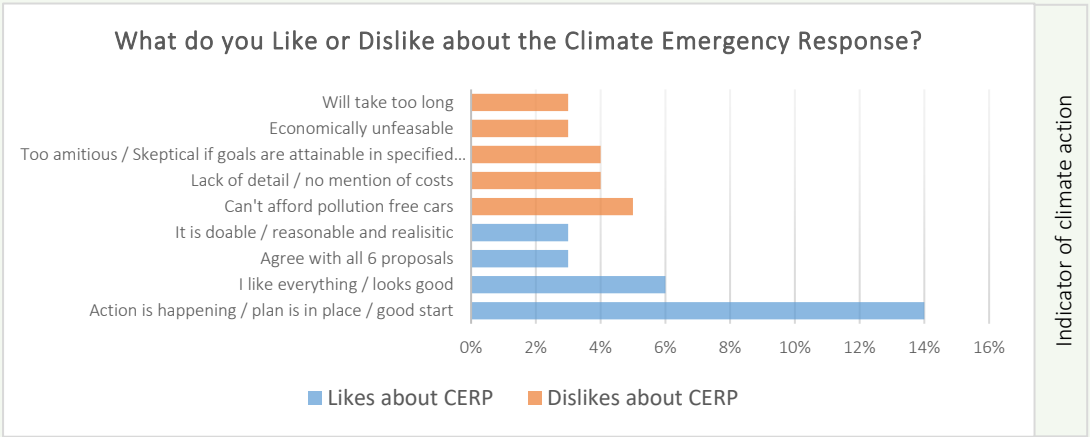
OC #1	A High Level of (climate) Literacy Amongst Community		
	Mobilization Indicators (current but preliminary)	Possible indicators that link mobilization and social capital	Rationale
1	% survey respondents that can correctly ID biggest local carbon pollution sources	% survey respondents that know what *climate action* is; % survey respondents that know different kinds of climate actions to take (without prompting)	
2	# participants in City's climate related programs (or interest in, like applicants)	% survey respondents that know what *climate action* is;	
3	% survey respondents that can correctly ID most impactful climate actions	% of survey respondents that feel *capable* of taking on climate actions (mentally/emotionally or financially)	
4	# supportive Council correspondence for Council decisions (and % supportive vs neutral or oppositional)	# of letters to council members asking for greater climate action	Ask council offices to keep data / report types of correspondence?
5	#/% of accurate media coverage on CEAP related initiatives	# of respondents who visit COV or public websites that encourage climate action	

6	# of public interactions about climate action		
7	# of COV workshops, sessions, groups (engagement) on climate action		
8		% survey respondents that feel *confident* in the climate science and the actions needed to change it.	Learning about respondents' "climate confidence" may be an indicator to their cognitive dimension of social capital
9		Q: How concerned is your community about climate change? *Very concerned; Somewhat concerned; Somewhat unconcerned; Not very concerned at all.*	Perceptions of community climate action may feed into 'peer climate action.'
10		Q: Are you generally doing the same as your community in regards to climate action? *The same; Somewhat the same; Somewhat different; Quite different*	Perceptions of community climate action may feed into 'peer climate action.'
11		What do your neighbours think are Vancouver's biggest contributor to climate change?	Perceptions of community climate action may feed into 'peer climate action.'
12		Do any of your neighbours or community members think you are a source of information on climate change?	Perceptions of community climate action may feed into 'peer climate action.'
13		How knowledgeable are your neighbours about climate change?	Perceptions of community climate action may feed into 'peer climate action.'

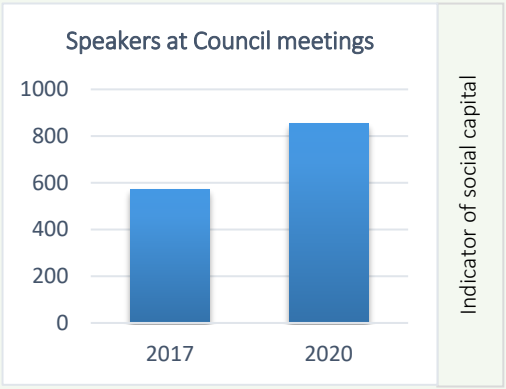
* Note: Black text refers to current COV Indicators; purple text refers to possible indicators for future analyses. Start from the left and move right across the chart to see how Mobilization Indicators relate to possible indicators that are connected to social capital.

2. *A Community that Supports COV to take (Climate) Action*

"In general, people are slightly more engaged in political action than previously, and about ¼ have made at least 1 motivated climate change. Meanwhile, generally COV has increased their support of social, cultural, and environmental efforts through granting than previously."



What might a relationship be between these two Indicators?



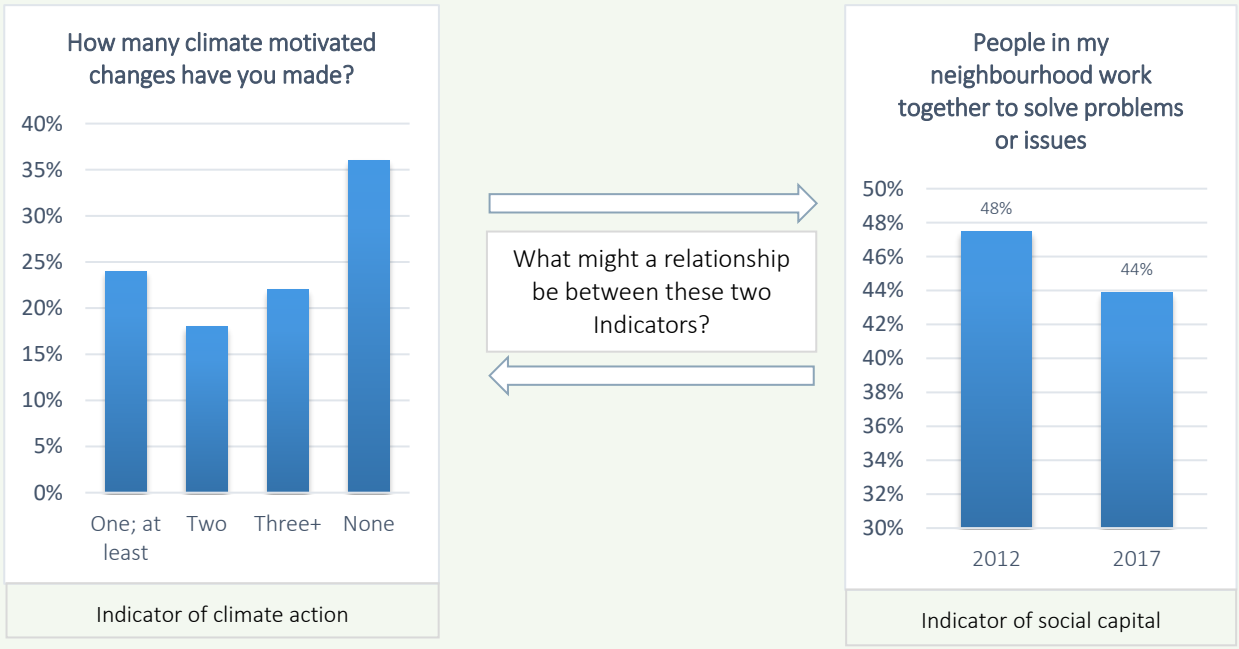
*** A relationship might be** (hypothesis)**:** When respondents feel empowered to speak at council (about climate change), they like the Climate Emergency Response and support the COV to take action. Perhaps, in the next questionnaire, respondents will agree with all 6 proposals more.

OC #2	A Community that Supports the COV to Take (climate) Action		
	Mobilization Indicators (preliminary)	Possible indicators that link mobilization and social capital	Rationale
1	% support/neutral responses in CEAP engagement input		
2	# supportive Council speakers for Council decisions (and % supportive vs neutral or oppositional)	I spoke or supported a speaker while being present at a council meeting, about climate action	
3	# supportive Council correspondence for Council decisions (and % supportive vs neutral or oppositional)	I voted in the last municipal election for a candidate with strong climate action initiatives	
4	# climate marches/climate march participants?	I attended a political rally or meeting about climate change	
5	% of communities that engage in climate action initiatives	I signed a petition about climate action	
6	# of voters for candidates which support climate action / green initiatives	Q: Do you ever feel like you should change your behaviour toward climate action, due to your neighbours pro behaviour? *Agree; Somewhat agree; Neither agree nor disagree; Somewhat disagree; Disagree.*	Perceptions of community climate action may feed into 'peer climate action.'
7		% of people who agree climate action may bring disruption to their community (and are willing to risk it)	Perceptions of community climate action may feed into 'peer climate action.'
8		Q: This community has communal disorder due to climate inaction. *Examples: Neighbours only driving to work; Neighbours owning 3+ vehicles; Neighbours excessively watering their lawns; Neighbours leaving their lights on at all hours; Neighbours driving "gas guzzling" vehicles. Agree/Disagree.*	Perceptions of community climate action may feed into 'peer climate action.'

9		Q: What kinds of changes has your community made in the last few years? *Some neighbours have: switched primary transportation (Walking & cycling); Reduced number of vehicles or went car-free; Have a diet low in lamb, beef, and dairy; Voted for those that promised to implement strong climate plans; Reduced air travel; Moved to a complete and compact neighbourhood; Implemented retrofits to reduce home heating energy; Supported against the expansion of fossil fuels infrastructure; Replaced their furnace and hot water; Transitioned their vehicle to electric from gas.*	Perceptions of community climate action may feed into 'peer climate action.'
10		Q: How many neighbours have made at least one climate motivated change? 1; 2; 3; 4 or 5; 5-10; 10+	Perceptions of community climate action may feed into 'peer climate action.'

3. *Broad and Diverse Leadership and Community Participation (in Climate Initiatives)*

"People are engaged less in their communities, and less active on common collective issues. Meanwhile, generally COV is slightly increasing their pathways to social capital."



*** A relationship might be** (hypothesis)**:** If respondents' attitudes are that their neighbourhood doesn't work together to solve problems, and more people have made no ("none") climate motivated changes, then they may not be exhibiting leadership and community participation. This Outcome is related to social capital because "broad and diverse participation" is related to *bridging social capital*, where community members actively connect through diversity. If the social capital in a community such as this is decreasing, then it is *possible this Outcome will not increase, unless broad strategies are undertaken to shift the community dynamic.

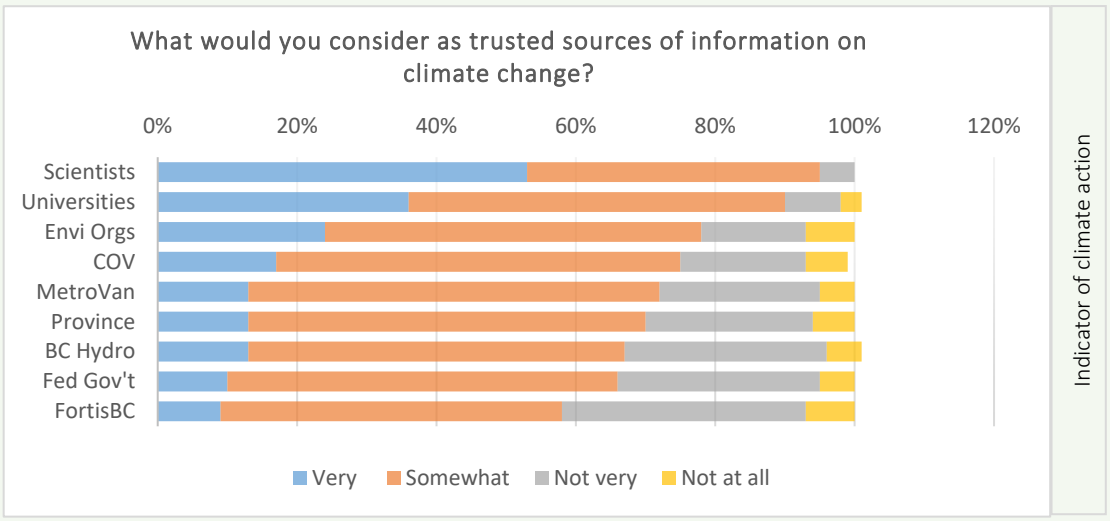
OC #3	Broad and Diverse Leadership + Community Participation (in Climate Initiatives)		
	Mobilization Indicators (preliminary)	Possible indicators that link mobilization and social capital	Rationale
1	# participants in City's climate related programs (or interest in, like applicants)	# diverse participants in City's climate related programs (or interest in, like applicants)	
2	% people that participate in community-led climate initiatives	% diverse groups (cultural, race, religious, LGBTQ+ communities) that participate in community-led climate initiatives	
3	% people undertaking actions that demonstrate leadership	% people undertaking actions that demonstrate leadership, like innovators or eco-preneurs of climate action projects, non-profits that champion climate action, community initiatives, new technologies that reduce climate impacts, school groups.	
4	% of people who are climate leaders (walk the talk, taken 3+ actions toward climate mitigation)	% of people who declare they have "climate confidence"	Climate confidence is a cognitive social capital dimension that supports a system of meaning toward climate action. Climate confidence affirms people's values that drive action, through conversations open to debate with confidence in supported science, economics, and a sustainable future.
5		% of employed / underemployed people engaging in climate action	Disproportionally impacted communities, such as those who are unemployed or living on the streets may be unsung heroes who are actively engaging in climate action, but have not been "counted" in surveys or statistics.
6		# of green jobs; # of jobs with green initiatives; # of jobs that have emphasis on green initiatives	
7		# of community partnerships where the partner engages communities in climate action	
8	# of special permits issued for projects supporting climate action		
9		# of participants in University courses that support climate action	
10	# of grants awarded from other non-profits, foundations, philanthropists, etc., for community-based climate action initiatives		

4. Strong and Diverse Network (of Climate Supporting Relationships)

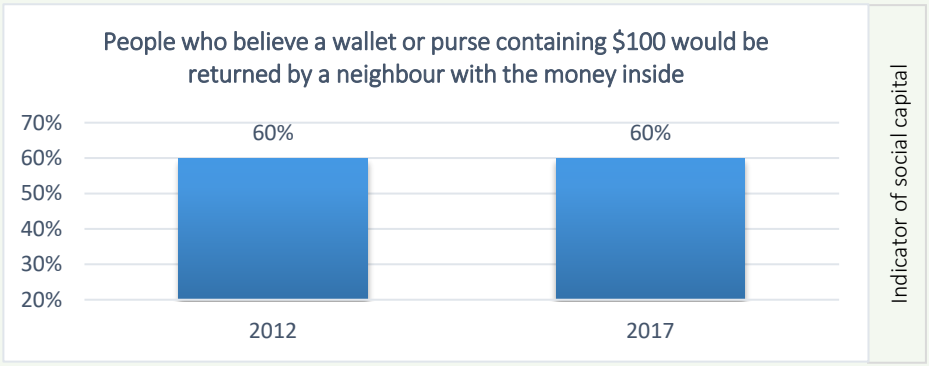
"People have about the same # of close friends, but are getting together with them less than previously, and seem to like being alone more;"

AND…

"In general, people feel less welcomed or like they belong than previously, and don't feel like their community works together on problems as much, but trust each other about the same."



What might a relationship be between these two Indicators?



*** A relationship might be** (hypothesis)**:** When respondents are part of a strong and diverse network, they feel like they can trust their neighbours to return their wallet, and also trust the local government (COV) about their policies on climate change.

OC #4	Strong + Diverse Network (of Climate Supporting Relationships)		
	Mobilization Indicators (preliminary)	Possible indicators that link mobilization and social capital	Rationale
1	# of trips in EV / # of KJ from heat pump	% or # of friends that have a heat pump or EV	(this can be calculated without a survey, using statistical correlations. Used to promote "peer climate action")
2	# participants in City's climate related programs (or interest in, like applicants)	# of people with 3 or more close friends that support climate action	
3	% people that participate in community-led climate initiatives	# of close friends that support climate action	
4	# of org's with climate action initiatives	I know the names of climate action organizations: 1 org, 2-4 orgs, 5-10 orgs, 10-15 orgs.	

5	% of obstacles in people engaging in climate action: work or school; not enough time; family obligations; being too far away; health issues; personal finances; overwhelmed or stressed; inadequate transportation; etc. climate literacy rate of neighbours ("peer climate action")	Obstacles when encouraging your neighbours or community organizations in participating in climate action. Choose all that apply: I don't want to appear as if I'm putting pressure on them; I don't want to appear as if I'm better than them; I don't know how to approach them; I don't know what to say; I don't' have enough time; I don't want to be judged; I don't believe enough in climate action to encourage them.	Perceptions of community climate action may feed into 'peer climate action.'
6	% of housing types that have heat pumps / retrofitting etc.		
7	Walkability score		
8	Level of trust in COV	% of people who feel welcomed by climate changers	
9	# of people who carpool	# of people who believe their neighbours will buy an EV within 5 years	Perceptions of community climate action may feed into 'peer climate action.'
10	Level of trust in climate action programming from COV	How often do you support organizations that you trust? (with patronage, or donation): 1xweek, few times a month, 1x month, few times every 6 months, etc.	
	# of clicks on COV site that leads to climate change education site	% of children who walk, cycle, take transit to school	
		% of high mental health linked to % of people who engage in climate action	
		% of median personal income linked to % of people who engage in climate action	
	# participants in City's climate related programs (or interest in, like applicants)	% of people who attended a green program, meeting or initiative	
	% of people who are climate leaders (walk the talk, taken 3+ actions toward climate mitigation)	My values of climate action are welcomed in my neighbourhood, I feel like I belong: Agree/Disagree.	
		Climate action in my neighbourhood is getting stronger.	
		I find it difficult making friends here who believe in and practice climate action.	
		I trust people who do not engage in climate action. I do not trust people who engage in climate action.	
		Participated in a neighbourhood or community project about climate action	
		Participated in a "green" or climate change volunteer event or project	
		How often do you get together with people/friends who engage in climate action? (Every day; A few times a week; Once a week; 2-3 times a month; Once a month)	

Relating Social Capital to Community Mobilization

If a community has higher or stronger social capital, will that lead to the community mobilizing toward climate action? This is an important question. There is no clear or direct causal link between social capital and community mobilization for climate action. This is in part because of the vast array of possible factors that could lead any single individual or group to decide to engage in climate action or not. Such a link is weak in terms of making correlations that are valid. However, this does not negate social capital's role in community mobilization. To mobilize a community toward any kind of action will require a "community effort," but if the community doesn't trust one another or if individuals do not feel like they will belong, then why will they mobilize collectively toward anything? Social capital *is about community* and focuses particularly on how a sense of connectedness leads to engagement and collective action. Community mobilization is about how communities "move" toward new ideas or actions. This sub-section will explore these types of relationships between social capital and community mobilization.

There are two key suppositional links between social capital and community mobilization that are noteworthy for this Framework: "peer climate action" (Relational Dimension of social capital), and the "climate confidence" (Cognitive Dimension of social capital), as touched on earlier and explained in detail below.

Peer Climate Action (Relational Dimension)

Peer climate action, as previously noted, is the behavioural change due to peer influences as individuals meet new collective social norms of climate action. It is the "keeping up with the Jones' who are climate activators" amongst other increasing number of climate activators in the community. When the community reaches a threshold level or tipping point, the influence increases such that a "virtuous circle" of climate action thinking and behaviour change spreads throughout the community (Jones & Clark, p. 14). This is social capital related because peer climate action requires peers in personal networks, social cohesion to those peers, information distribution in the network, community engagement in pro-mitigation behaviours and collective action toward communal change. Community-based social marketing includes elements of peer climate action through its removing of barriers toward community norms of sustainability (Natural Resources Canada, 2013); however, doesn't include the broad-scale and dimensions that social capital research offers. Peer climate action is directly connected to the relational dimension of social capital because it is about trust and trustworthiness, social norms, and the assets or resources that are leveraged through those relationships (i.e. a person gets a "status" asset for keeping up with the Jones'), and ultimately is about behaviour that is motivated through sociability.

However, notions of community behavioural change are riddled with challenges, including habitual dispositions and regular non-climate related routines. Agencies that promote climate action must therefore change the contextual cues of behaviours and perceived rewards to alter individual and social inertia that can slow down progress to overcome the tipping point of habitual response and instead instigate change (Southerton, 2012, p. 337). As Wood and Neal (2009) suggest, "to act in nonhabitual ways, consumers must make the decision to do something new and in addition must override the accessible habitual response in memory" (p. 582). If behaviour is to be changed towards climate action initiatives, governmental interventions need to be targeted appropriately. With a key focus on habit disruption (i.e. perturbation) and goal-direction setting, government agents can assist in generating peer influence toward community-wide habitual change that increases in conjunction with behaviour analysis through social programming (Knussen and Yule, 2008, pp. 698-699).

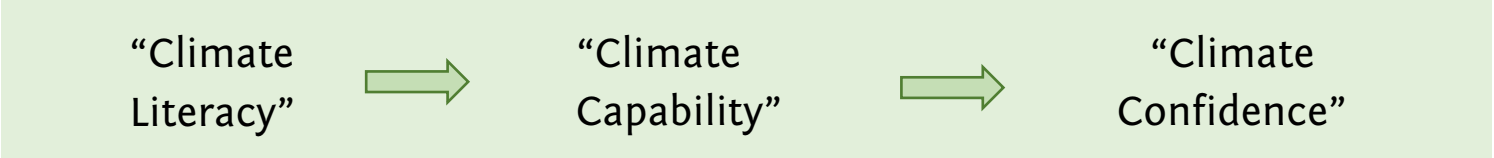


Figure 8. The development of “climate literacy” to “climate confidence.”

Climate Confidence (Cognitive Dimension)

People won’t change their behaviours based on information distribution alone (Whitmarsh, Seyfang, and O’Neill, 2011, p. 63; Unrau, 2019). One challenge with models like “climate literacy” is the assumption that “if people who are not climate actors only had more information, they’d change.” Information alone does not change behavioural patterns or a belief system; the value-action gap of personal and social habits reaffirms this. For example, in one study 90% of respondents knew that driving and flying contributed to climate change causing CO_2 emissions, but only 6–36% of them altered their behaviour, depending on which transport behaviour they made changes to (Whitmarsh, Seyfang, and O’Neill, 2011, p. 63). While “climate literacy” is a step towards knowledge-building and “climate capability”[20] is a behavioural-based approach that encourages effective decision-making and positive behaviour change, both do not directly address the deeply rooted belief systems and worldviews that drives personal narratives and behaviour.

As an alternative, “climate confidence” is a concept that promotes a system of meaning about climate change, where people have “confidence” in the validity of science, shared values of protecting family health for generations to come, shared goals of economic-minded solutions for sustainability, so that people may have inclusive dialogue even with a diversity of opinion and be “confident” that their personal actions will slow down climate change toward a sustainable future. Climate confidence draws on the Cognitive Dimension of social capital, and focuses on shared understandings and a shared language toward a common sense of being, rather than divisive “us-versus-them” debates. It balances the “merchants of doubt” that can obscure the truth into collective inaction (see Oreskes & Conway, 2010). For example, religious communities may have very diverse individual behaviours and political persuasions, but the common belief in the religion acts as a bonding form of social capital, united by a cognitive belief in a spiritual figure. Climate confidence works in a similar way: despite how diverse a community might be, they may all come together in their “confidence” in the climate science and the actions needed to make change.

Climate confidence might be a way in which governments promote the shared values needed for climate action by working with “climate influencers.” As key members of diverse communities, such influencers may broker ideas of climate action to their community as a whole, to generate collective peer influence so that a tipping point of some community members who are engaged in climate action reaches threshold levels to turn an entire community. Then the community becomes a “climate community” which reinforces collective values, shared understandings of collective physical, economic, and environmental well-being.

When climate confidence is linked to lower costs like the long term savings in switching to an electric vehicle (Harto, 2020), then citizens can have “climate confidence that you are not only helping the environment but also increasing long-term savings.” Such framing may bring those not engaged in climate action onboard toward greater social inclusion and social capital. For example, one study suggests that those not mitigating climate change may be “motivated to engage in pro-environmental action where they think climate change action would result in people becoming more moral, interpersonally warm and competent, and where action would lead to greater societal development or reduced societal dysfunction” (Bain, Hornsey, Bongiorno & Jeffries, 2012, p. 600). As one participant stated, “while I personally don't believe in climate change as a recent phenomenon, I do agree with reducing our carbon emissions… think of the possibilities that this would open to individuals and business alike, it would create jobs” (p. 601). Climate confidence then reduces division and focuses on shared values of well-being for all.

[20] Defined as the effort to increase the public’s “ability to make informed judgments and to take effective decisions regarding the use and management of carbon, through both individual behavior change and collective action” (Whitmarsh, Seyfang, & O’Neill, 2011, p. 59).

Punctuated Social Change?

Knowing whether an Indicator points toward gradualistic or punctuated social change can be understood through its *rate of change.* In this Framework, certain Indicators will have a significant *difference* compared to an insignificant difference. If the difference is significant, it is possible the Indicator is trending toward a social dynamic of greater change over a shorter period of time. When the Indicator is trending with a high significant difference, then it is possible that the social dynamic (the social systems area of change that an Indicator is pointing toward) is undergoing (mini) punctuated social change. In other words, paying attention to trends as outlined in the Analysis Spreadsheet is something that policy makers may want to pay attention to, to track changes of significant social change, and then leverage the factors leading to those trends to either amplify or reduce the impact.

* It should be noted that determining punctuated social change in this manner is a weak proxy and not causally linked. Other factors may be the cause of such a high significant difference, such as the lack of long-range data analysis, short spikes due to niche-level perturbations, anomalies in the data, or other undetermined factors. Still, paying early attention to such trends may assist policy-makers in knowing where to look, and what to support in future programming.

Credit: Red Dot, Unsplash.

Application, Conclusion & Recommendations

Application

The potential of social capital and also its limitations is important for governmental planning projects on climate action and climate change mitigation (Petzold, 2016, p. 123). As Petzold tells us, “Further research using qualitative and quantitative research methods can show how social networks and participation in community groups influence the mobilisation of social capital” (p. 132). Applying this Framework into management structures or policy changes will engage multiple departments in the collection of and analysis of social capital and community mobilization. Below are some practical applications for this Framework at COV.

Uses of the Framework at the City of Vancouver

Six (6) key applications of this Framework for local governments like COV are:

1. A scholarly document describing social capital as a concept for understanding community connections. This will be beneficial when needing to understand the types, dimensions, and functions of social capital in any department, such as Sustainability or Social Policy.
2. A guide on how to measure social capital, for future projects on COV’s need to understand community engagement and collective action. The guide asks questions of the researcher to develop and generate indicators for social capital.
3. A guide on how to measure community mobilization (in the context of social capital), to support COV completing its project on community mobilization with research-backed theory and analysis.
4. A contextual guide on how to align community mobilization to social capital, to determine if social capital will impact measurements of mobilization. The report has practical examples of “peer climate change” and “climate confidence.” It also offers a practical guide on what variables to consider when quantitatively measuring community mobilization as it relates to social capital.
5. An analysis of social capital trends in Vancouver, with supplementary correlations to community mobilization. The Analysis spreadsheet presents current trends but also offers future possibilities for analysis if data is added consecutively over time to track growing trends of social capital for different departments in their own analyses.
6. A resource for Indicators on Community Mobilization and Social Capital, allotted to the four (4) Outcomes of mobilization as currently defined by COV.
7. A guide on where to build social capital in Vancouver for future community development and mobilization toward climate action.

The companion document to this Report is the Analysis Spreadsheet, which is a data bank and analysis of social capital trends and their correlation to community mobilization. In order to understand how to apply the specific data knowledge gathered for this Report, and how to use the Analysis Spreadsheet, please see Appendix E for a guide.

Conclusion & Recommendations

Social capital is an important concept to understand and to measure by, even with its challenges. It has shown to be extremely beneficial in its variability as an "umbrella" term and captures many aspects of social connectedness and collective action. For that reason, the research for this Report focused on building a framework to measure social capital, how it can be related to community mobilization, and identifies opportunities for COV to build social capital as it may impact climate action.

A Framework of Social Capital

Findings reveal that other frameworks defining and measuring social capital offer rich resources to apply to the COV and Vancouver context. The Framework in this Report, while based on elements of other frameworks (primarily Nahapiet & Ghosal, 1998; Dudwick, et al., 2006), offers contextual insights into how to define and measure social capital. This Framework proposes a cohesive definition from several sources (Nahapiet & Ghoshal, 1998, p. 243-244; Putnam, 1993, p. 35; Lin, 2001, p. 12) as:

> *Social capital is the connections and shared values between people, what they gain from such connections and values such as norms of trust and cooperation, and the resulting behaviours and purposeful actions that are beneficial for the group.*

It identified six (6) Indicator Types: 1) Personal Networks and Social Connectedness; 2) Social Cohesion, Inclusion & Trust; 3) Social Health: Personal, Communal & Environmental; 4) Community Engagement & Collective Action; 5) Information & Communication; and 6) Empowerment & Political Action (defined in greater detail in "Six Indicator Types"). A series of measurement proxies as Indicators of social capital were identified based on these six Types, and included in an Analysis Spreadsheet for detailed analysis (a summary is in this Report in "An Analysis of Social Capital"). The Analysis Spreadsheet will help researchers understand where to look for social capital in a community or municipality, and how to measure it.

An Analysis in the Vancouver Context

An analysis of social capital measurements in the Vancouver contexts indicates that people are getting together less than previously, and may even like being alone more. People feel less welcomed or like they belong, which might be a reason why they feel like their community does not work together on problems as much as they used to. However, trust levels are nearly the same as previously, which is a good indication that there is social capital "stock" from which to draw from. While people are thriving financially more, they are thriving mentally and physically less. Community members are notably less engaged with each other than previously, but are slightly more active politically. It is possible, that the drive for financial security may be one reason as to why communities are spending less time with each other and more time alone. Thankfully, communities are taking actions to help the environment a little more than previously. Meanwhile, COV is slightly increasing their pathways to social capital through supporting projects and granting opportunities. They could increase their communication and interaction with the public and therefore continue to be more effective, especially when it comes to climate action.

Of course, it would be misleading to summarize all social capital trends in one statement or number (such as "social capital is increasing in Vancouver by 5%"). However, recognizing that COV council or SUS leadership teams need summative statements for decision-making, the six (6) social capital Indicator Types and the summative statements in this Report provide some nuance to how social capital is trending in Vancouver. Such qualitative and therefore subjective perspectives of social capital, when framed in a transparent context, reduce imposed statements on communities that may not traditionally have their voice heard at decision-making tables, and thus reduce systemic challenges of discrimination.

Community Mobilization

Findings reveal that community mobilization *is* related to social capital. This is because both are about community and how they collectively engage in purposive action. While a direct causal relationship may be difficult to identify between the two concepts, a Metric to possibly measure social capital's impact on community mobilization was outlined in this Report. The Metric included instigating questions so that Indicators generated would be rooted in social capital and community mobilization theory.

Several key concepts arose in the analysis regarding the relationship between social capital and community mobilization. The first is *peer climate action* as a term to describe the peer influence of events triggered by an outside source (such as COV) that moves people toward climate action. The next concept is *climate confidence*, which builds on climate literacy (knowledge building) and climate capability (behaviour adaptation) to influence people based on a shared value system in climate science and the actions needed to generate sustainable change.

Recommendations

Below are some recommendations for COV and SUS to consider in next steps toward their goal of mobilizing communities toward climate action. Some recommendations focus entirely on social capital, in terms of the original outcomes for this Report, and others are in the recognition of social capital's significance to community mobilization.

1. Do primary research on social capital's relationship to community mobilization. The value of social capital at COV is clear: it is already used in departments such as in Social Policy for the Healthy City Strategy, and would be practical in Sustainability for the Community Mobilization project (in its relationship to collective action). There are several simple ways to gather primary research on social capital. First, update the 2019 Greenest City Action Plan Survey (or its evolved rendition) to include a few key questions on social capital and its correlation to community mobilization toward climate action (suggestions can be found in this Report in the "Analysis of Mobilization"). Secondly, collaborate with the *Vancouver Foundation* on adding a few key questions in their next Connect & Engage survey. They are likely to be doing another survey in 2022 (since they did one in 2012 and 2017 at 5 years apart). Doing so would gather important data on social capital's impact on community mobilization. **Please* encourage all surveys to keep key questions *the same* over time, so that common indicators can track trends.

2. Research social capital and community mobilization specific to disproportionally impacted communities. Communities that are the most impacted by climate change are also the communities most impacted by discrimination. Increase the research detail to disaggregate the data to include variables that consider the marginalization of systemically excluded communities. While the 2012 Vancouver Foundation survey did have questions on diversity, these questions were not continued in 2017, and thus there is a gap of readily available data that correlates social capital on diverse communities over time. A new algorithm from a University of Montreal project on perceptions of climate change makes possible the ability to localize Statistics Canada data to local postal codes (Mildenberger, 2016; see also University of Montreal, n.d.).

3. Do further research and implement strategies about "peer climate action." Increasing communication strategies and education programs around three key ways to affect climate change (i.e. buy an EV, purchase a heat pump, and support COV policies) in simple, direct, language, may increase knowledge about climate action. However, community mobilization cannot happen by implementing "climate literacy" programs alone. First, categorize different communities in Vancouver (geographical, political, religious, online, etc.), and *make alliances with key social influencers* of those communities. Next, strategize with the influencers to generate climate action as a *social norm* so that a "virtuous cycle" of responsible action toward climate action may occur.

4. Do further research and implement a campaign about "climate confidence." Research shows that "climate literacy" programs and the more recent "climate capability" programs may begin to instigate behavioural change; however, the underlying worldviews may not be addressed with these two types of strategies. "Climate confidence" is a cognitive social capital dimensional strategy that addresses systems of meaning within a community through peer

influence (see the sub-section on "climate confidence"). It focuses on shared *values* of health and family to build confidence in a community that climate action will work when it is committed. Key community influencers may be helpful in championing climate action in their community as a necessary step in community mobilization.

5. Use a 2-tiered strategy approach: Build long-range support for communities' social capital AND build strategies about "punctuated" social change. Short-term high-impact social change processes have a high risk of failure. While strategies to meet the climate emergency deadlines need to happen quickly, *also* build communities' gradual capacity to trust, reduce isolation, and build belonging at the same time, so that short-term and long-term social change may occur. "Punctuated" social change potentially has huge benefits, with contagion behavioural influence being considerable. First, work with a partner organization that can instigate a rapid-scaled social movement (e.g. the ALS Ice Bucket Challenge), by using a SMART campaign along with social tipping intervention strategies around climate action. Start with a small "bite-sized" incentive, like a campaign around climate confidence and communal engagement. The effort here is not to mobilize people to buy an EV or heatpump *at first*, but rather *connecting climate action to their values so that they become inclusive of buying these things.* Appealing to mass mobilization through a viral campaign may be one way to strategize toward punctuated climate action.
   To prototype this model, develop a "punctuated" change campaign *within COV,* as a pre-research project in how communities respond to SMART campaigns. For example, a government working in a community that stages local protests which demand racial equity etc., needs to undergo radical policy change itself on racial equity if it hopes to mobilize the community toward social harmony. Do this about climate action.

6. Deeply involve community in policy decision-making processes. Adaption to climate change requires offering people the ability to become deeply involved in policy decision-making processes. The research shows by instilling "ownership" of decision-making strategies through community collaboration, members become activators in their own communities in peer climate action through climate confidence. For example, imagineCalgary was a City-led, community-owned collaborative initiative to produce Calgary's plan for long-range urban sustainability. The City provided staff, but 150 stakeholders were responsible for developing the plan through a series of targets. These stakeholders became champions and then influencers in their communities, building trust and collaboration (i.e. social capital). Something similar is happening in the UK through the climateassembly.uk. Consider working with key influencers in communities specifically from diverse backgrounds to be champions of newer policy changes.

7. Develop climate action policies that include *community preferences.* While the COV has research-backed policies on community development, design the policies to be community-driven to their specific needs. This increases trust. Consider working with "environmental psychologists or social scientists to design behaviour-change programs that target specific populations… Strategies should try to match the motivations, demographics, culture and values of their target audience" (See Sussman et al., 2016, p. 4). Such strategies would need to focus on habit disruption (i.e. perturbation) and goal-direction setting toward community-wide habitual change that increases in conjunction with behaviour analysis through social programming.

8. Focus on programs and strategies that reduce isolation and increase belonging. The research suggests that people are spending more time alone (perhaps by choice). However, solitary living depletes a community's stock of social capital, which can be life-saving in emergencies like climate change events. The 1995 heat wave in Chicago saw a high number of deaths of isolated individuals, mostly in the upper floors of high-rise buildings.

9. Implement policies to support community engagement programs and building design to have "bumping spaces" where people are more likely to "bump" into each other and then engage. Studies show building contractors are (usually) not concerned with community engagement in buildings (see Dominguez, 2016). Communities are in decline of communal engagement, which is the heart of social capital, and "bridging" social capital allows people unfamiliar with each other to connect. With higher stocks of social capital, community mobilization on strong networks will be more possible.

10. Use the Analysis Spreadsheet as a "living document" of social capital research, by adding data as it comes in and therefore track social capital trends over time. Some indicators COV is already tracking; however, there are some gaps that COV could capture or gather with some effort. These are noted in the Analysis Spreadsheet (in the ANALYSIS tab in light red).

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Appendices

The following Appendices hold detailed but supplemental information about relevant topics in the body of this Report.

Appendix A Sources of Quantitative Data

All data collected and analysed was secondary, and largely quantitative (noted below). For the selection criteria on why which sources were used, please see the Methodology section in "Data and Measurement." Data sources were:

1) *Vancouver Foundation*: Connections & Engagement Survey 2012 VF (Sentis Market Research) (raw data); and Connect & Engage Survey 2017 B851 (Mustel Group)(raw data). The analysed reports for these two surveys (2012 & 2017) were also used, as per this link: https://www.vancouverfoundation.ca/our-work/publications
2) *Statistics Canada*: Multiple statistical reports were used from Statistics Canada; however, the main source was "Trends in Social Capital in Canada," https://www150.statcan.gc.ca/n1/en/pub/89-652-x/89-652-x2015002-eng.pdf?st=HBFEVNu7. For the other sources, see the "Source" column in the Analysis Spreadsheet. All data usage was provided by Statistics Canada under license terms viewable online at: https://www.statcan.gc.ca/eng/reference/licence.
3) *Vancouver Social Indicators Profile 2020*: The Profile was gathered by COV staff in the Social Policy and Projects Division or Arts, Culture and Community Services prior to 2020, and was an analysis of previous secondary data. Where possible, this Report and Analysis Spreadsheet used the Profile to find the original data provider and used that source (mostly Statistics Canada); however, in some cases, only the Profile data was used, due to limitations in time, source findability, or analytical recalculation. https://vancouver.ca/files/cov/social-indicators-profile-city-of-vancouver.pdf
4) *COV Open Data Portal*: The Portal was used to find multiple statistics on current projects within COV. Data came from multiple departments, much of which was through direct observation. https://opendata.vancouver.ca/explore/?disjunctive.features&disjunctive.theme&disjunctive.keyword&disjunctive.data-owner&disjunctive.data-team&sort=modified
5) *Healthy City Strategy* (Dashboard). The *Healthy City 4 All* program used social indicators and trends from 2014 or 2015, in regards to the 12 long-term goals of the COV Healthy City Strategy. The "factsheets" used here gathered and reported on secondary data from sources such as Statistics Canada, BC Statistics, and Early Development Instruments. See the Source column for detailed information. For more info: https://opendata.vancouver.ca/pages/healthy-city-dashboard/
6) *My Health My Community Survey*: Some data was taken from: *https://myhealthmycommunity.org/community-profile/vancouver/*
7) *Direct Observation*: In several cases, data was taken from COV program managers who gathered data themselves through direct observation. In these cases, the Source column of the Analysis Spreadsheet indicates as such, and who to contact for further information.

Please note: The data providers should not be considered responsible for data usage, display, or any errors caused from its analysis or use.

Appendix B Qualitative Methods for Measuring Social Capital

(Text quoted from Dudwick et al., 2006)

While robust conclusions regarding correlations between development impacts and social capital can be gained through quantitative research alone, this is far from an ideal approach. Because social capital exists between individuals and groups, it is preferable to employ some qualitative and participatory methods to understand the causes and nuances of relationships and the contexts within which they exist.

This [sub-section] offers a set of qualitative tools and strategies that are useful for gauging the nature and extent of people's interactions with each other and with key private, public, and civic institutions.

Qualitative methods and open-ended responses tilt the balance of power and expertise away from the researcher toward respondents and community members. Such methods are vital for examining complex issues of causality, process, and context. Open-ended questioning and focus group discussions are, in fact, designed to allow respondents to identify and articulate their priorities and concerns free from researchers' restrictions and assumptions. Qualitative methods such as focus groups, institution mapping, and priority rankings are particularly suitable for social capital research because social capital comes into play and can be observed during these exercises. In situations where [communities] are highly suspicious of quantitative surveys, qualitative work may be the only research option available for assessing social capital issues.

By focusing on questions of collective action and cooperation, a mixed-method approach can reveal the degree of civic capacity within a community.

Qualitative Tools (a comprehensive list)

1) *Participatory approaches* (Mikkelsen, 1995; Narayan, 1995; Robb, 2002). Participatory methods are conducted in groups. It is essential, therefore, that participants include representatives from each of the major subgroups in a community. Introduced to scholars and practitioners largely through the work of Chambers (1997; and more recently, Kumar & Chambers 2002), participatory techniques—such as the Participatory Poverty Assessments (PPA)—help development agencies learn about local poverty and project impacts in cost-effective ways.

2) *Focus group*, in which small, intentionally diverse or homogenous groups meet to discuss a particular issue, are also guided by a moderator with the intent of reaching consensus on key issues. The quality of insights yielded by focus groups is thus similarly dependent on the quality of the moderator.

3) A related approach is to use *transformative* participation techniques, such as Participatory Rural Appraisal (PRA), the goal of which is to facilitate a dialogue (rather than extract information) that assists the poor and others to learn about themselves and thereby gain new insights that lead to social change ("empowerment").

4) Another important qualitative tool is the *key-informant interview*, that is, an interview with someone who is a formal or informal community leader or who has a particular perspective relevant to the study.

5) *Life histories* and *open-ended personal interviews* are additional tools that have long been used in qualitative research.

6) The qualitative investigator can engage in varying degrees of *"participant observation"* as an actual member (e.g., a biography of growing up in a slum).

7) A fifth qualitative approach is *textual analysis*.

8) The *transect walk* is a participatory method that allows a research team to explore and better understand the significance of spatial differences in a given community.

9) A *historical matrix* examines changes in a community or within a group.

10) *Diary entries* supplement data collected through key respondent interviews and/or group discussions. In general, the following activities are recorded in a research diary:

• daily thoughts and reflections of an interviewer, which record yet another layer of analysis (often the “lens” of the trained researcher is not considered when local staff are trained for a qualitative study)
• observation of the environment and people’s behavior at the research sites.

11) A *resource exchange matrix* looks at what goods and services are exchanged in specific networks, as well as the purpose of such exchanges. The two matrices that follow were adapted from the social networks study in the Kyrgyz Republic (Kuehnast & Dudwick 2004) and are offered here as useful tools for investigating social trust.
• The second matrix illustrates the kinds of people that are integral to one household in rural Kyrgyz Republic and address the question, “To whom do you turn to for help or assistance?”

12) *Rankings* are a useful tool for eliciting information on group problems, issues, and/or needs, as well as for prioritizing these items. Ask community leaders or a focus group to list roughly six main problems in their community and then rank them in order of importance. Follow up with specific who, what, where, and why questions to crosscheck and triangulate the ranking results.
• What actions has the community taken to solve these problems collectively?

13) *Trend analysis* or *a historical matrix* can be used to assess how these priority problems have evolved over time by having a given group conduct the same ranking exercise with respect to a situation five or ten years ago and then comparing the two rankings.

14) *Media analysis* of formal communication channels (e.g., locally available print media, radio and television broadcasts, as well as brochures, newspapers, and posters hung in public spaces, etc.) can supplement interviews.

15) *Content analysis* (what is discussed, what is not discussed, level of accuracy or distortion, prevailing stereotypes, etc.) provides another perspective on the kinds of information that are available on national and/or local events, policies, laws, etc.

16) *Conflict risk screening* is another tool that can help determine the degree of potential risk of conflict in a community. The risk-screening process consists of inquiries based on eight indicators that aim to capture a deteriorating environment in a given community.

17) *Institutional analysis* can offer insight into which institutions support or undermine local cohesion from the perspective of local groups

18) Discussions can be complemented by a *desk study* of the formal and customary laws that affect the political participation of different social groups (e.g., right to associate and organize, vote, recall, or otherwise hold officials accountable).

19) *Venn diagrams* are an important complement to institutional analysis, as they provide valuable insights into power structures and decision-making processes, as well as the relative importance of public services and programs.

20) *Cause-and-effect diagrams* are another effective tool for helping a group sort out how various issues are interrelated, then develop an integrated framework to solve them. A group begins the process by brainstorming on the problems that affect day-to-day life in a given community. Based on the list that they produce, the group visually lays out the cause-and-effect relations between the problems.

Analyzing Qualitative Data

Analysis of qualitative data is primarily an inductive, as opposed to deductive, process, meaning that the researcher endeavors to discern patterns in the data rather than formally test pre-determined hypotheses. The end result is typically a detailed account of particular phenomena (known as a “thick description”), a list of propositions, or the construction of a typology indicating how one set of variables is related to one another.

Appendix C Definitions of Social Capital

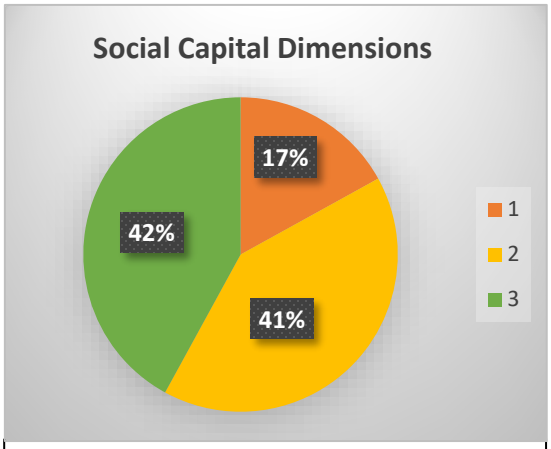
Designing a Framework requires an answer to the question of what social capital actually is. A definition to "social capital" has been contested for decades, for substantive and ideological reasons (Claridge, 2018b, p. 11; Dolfsma & Dannreuther, 2003; Foley & Edwards, 1997; Adler & Kwon, 2002). As a result, there is no singularly agreed upon definition in the literature. As a result, it has been suggested that, as it is used here, social capital is an "umbrella" term that includes multiple variables of social cohesion, inclusion, wellbeing, and connectedness, as well as the resources or networks that leads to these variables and incites individuals and communities toward collective and purposeful action. Several common academic definitions by some of the pioneers of social capital research are as follows:

1. *Bourdieu and Wacquant* (1992, p. 119): Social capital is "the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition."
2. *Robert Putnam* (1993, p. 35): Social capital is the "features of social organization such as networks, norms, and social trust that can facilitate coordination and cooperation for mutual benefit." Putnam (2015, p. 207) also says: "Social scientists often use the term social capital to describe social connectedness—that is, informal ties to family, friends, neighbors, and acquaintances; involvement in civic associations, religious institutions, athletic teams, volunteer activities; and so on."
3. *Nahapiet and Ghoshal* (1998, p. 243): "Social capital as the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network (Bourdieu, 1986; Burt, 1992)."
4. *Nan Lin* (2001, p. 12): Social capital is the "Resources embedded in a social structure; accessibility to these social resources by individuals; and use or mobilization of them by individuals engaged in purposive action."

In order to assist in understanding the context of a definition of social capital, a survey was distributed to COV staff, partners, and some general public. See below.

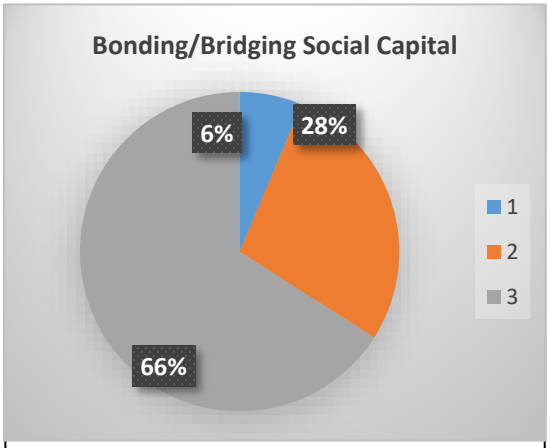
The Survey Analysis

To engage in a democratic process of leadership and a participatory model of decision-making, a survey was established to learn what others think about the term "social capital" (see Appendix D for the Questionnaire). A small sample size of (n=47) and completion rate of 78.2% included City Staff (57.4%), University students (other Sustainability Scholars; 19.7%), community-based organization members (14.8%), and other general citizens (8.2%). The survey offered a helpful direction to move forward to understanding which definition should be used for the term. Here are some results:



Respondent results that favoured a:

1. Cognitive Dimension
2. Relational (Asset) Dimension
3. Structural (Network) Dimension



Respondent results that favoured:

1. Bonding Social Capital
2. Bridging Social Capital
3. Both

On some questions, people leaned toward a Relational/Asset based Dimension of social capital, but those same individuals on other questions leaned toward a Structural/Network Dimension, which indicates respondents held general appreciation for both dimensions but varied due to context. Clearly, a Cognitive Dimension was less important for respondents. Diversity seemed important to respondents in their appreciation for bridging social capital and working across diverse populations.

People overwhelmingly appreciated the sense of “trust” as important to a definition of social capital, and leaned toward a humanistic appreciation of how the term can be used.

Appendix D A Survey on the Meaning of Social Capital

This survey is meant to assist the City of Vancouver's Greenest City Scholar project on building a social capital framework in order to understand and mobilize citizens toward climate action. Specifically, we hope to define the term "social capital" through an inclusive, participatory and democratic process by including your input from the following questions.
The survey has 10 questions and will take about 10 minutes to complete. We thank you in advance for your participation.
Please contact Michael Unrau, Sustainability Scholar, UBC, if you have questions or for more information: mike.unrau@ubc.ca.
Or contact Leslie Ng, Sustainability Specialist, leslie.ng@vancouver.ca.

Next page

1. Without doing an online search or discussing with anyone, please write below your current understanding of the term "social capital."

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This survey will help us understand the role that social connections as well as your personal and institutional networks play in creating more trust, cooperation, and action toward positive change in our city. Please answer from your own personal position (not from the position of your organization). All answers are confidential.

2. *Please rank in order from 1 – 3.* When you think of the people in your community, what is more important to you?

    a. Your and other people's behaviour and trustworthiness ___
    b. Your and other people's values and attitudes ____
    c. Your and other people's goals and actions ___

3. The following question assumes that your close relationships are already important to you. How important to you is…

    a. the nature and quality of your relationships with acquaintances and strangers?
    *The most important _ Really important_ Averagely important_ Somewhat important_ Not really important _ Not important at all_*

    b. the values, languages, and beliefs that you share with acquaintances and strangers?
    *The most important _ Really important_ Averagely important_ Somewhat important_ Not really important _ Not important at all_*

    c. the strength of your social network, particularly the ties between you and acquaintances or the strangers in your community (whether you personally relate to them directly or not)?
    *The most important _ Really important_ Averagely important_ Somewhat important_ Not really important _ Not important at all_*

4. *Check all that apply, even if you don't have a child or already have children that are married.* If you have a child that wants to marry someone, would you willingly accept them as your child's spouse and welcome them into your family, if they

    a. are from a different community than you?
    b. are a member of a different place of worship than you?
    c. are from a community "on the other side of the tracks"?
    d. are from a completely different religion?
    e. are from a family that has very low income?
    f. hardly speak any of the languages you speak?
    g. are from a different racial background than you or your family?
    h. are the same gender as your child?

i. do not identify as a male or female?
j. are from a billionaire's family?
k. have a disability?
l. vote for the *opposite* political party that you usually vote for?
m. have 10 years or more difference in age than your child?
n. don't believe climate change is really that big a deal?

Next page

We would like to ask you a few questions based on your first impression or current understanding of the term "social capital." *(p.s. a "social network" is: the web of connections you have to others personally or through the organizations you are part of)*

5. *Please choose one.* Is social capital about

    a. what you learn, gain, or the resources you may draw upon from your social network?
    b. how strong or weak your network is (i.e. the number of connections you have or the quality of those connections)?
    c. Both?

6. *Please choose one.* Is social capital about a community's relationships

    a. between the members and their closest social connections?
    b. between the members and their connections to others that bridge differences of culture, beliefs, purposes, identities, genders, etc.?
    c. Both?

7. The following definitions are standard definitions of "social capital" that come from different researchers from various academic disciplines and backgrounds. *Please rank in order from 1 – 3 your <u>preferred</u> definition of the term.*

    Social capital is

    a. the investment in social relations with expected returns in the marketplace (i.e. the marketplace can be economic, political, labor, or community).
        i.e. when people or groups "invest" in their social network and expect things in return (e.g. I'll lend you my hammer because I know later you'll lend me something).

    b. The sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition.
        i.e. the tangible or intangible things that a person or group gets by being in a social network, even when it has been organized by an institution (e.g. church group, community organization, etc.).

    c. The features of social organization such as networks, norms, and social trust that can facilitate coordination and cooperation for mutual benefit.
        i.e. the things in a social network like trust and group-agreements that help the network cooperate and engage in action for the sake of everyone's benefit.

Next page

We want a diversity of opinions to help us define social capital. The following questions helps us understand whether we are hearing from the diversity that is Vancouver.

8. Please choose one of the following:

    a. I work at the City of Vancouver
    b. I work in a community-based organization or business
    c. I work privately, or am not employed
    d. n/a

9. Where do you live?

a. Within Vancouver's city limits
b. In the Metro Vancouver region
c. Another city or town outside Vancouver's metro region.
d. Rural British Columbia
e. A First Nation reserve or community

10. How do you identify yourself? Check all that apply that you are comfortable sharing. Your answers are confidential and anonymous.

- ◉ ○ Indigenous (First Nation, Metis, Inuit, or American Indian)
- ○ ○ Black, Person of Colour
- ○ ○ Mixed race, multi-racial
- ○ ○ White
- ○ ○ Person with disability, mental illness or chronic condition
- ○ ○ Two-Spirit, Lesbian, Gay, Bisexual, Queer, Questioning, Intersex, Asexual+ (2SLGBQQIA+)
- ○ ○ Gender nonbinary
- ○ ○ Transgender
- ○ ○ Woman
- ○ ○ Man
- ○ ○ Youth, retired, or senior
- ○ ○ Self identify
- ○ ○ Prefer not to identify

Appendix E How to Use the Analysis Spreadsheet

The companion document to this Report is the Analysis Spreadsheet, which is a data bank and analysis of social capital trends and their correlation to community mobilization. In order to understand better how to use the Analysis Spreadsheet, included here below is a summary of how it may be used. The below text is also included in the Spreadsheet itself (on the 2nd tab called "HOW to."

1. *If your interest is about Social Capital:*

First, go to the MAIN tab at the bottom of this Document. The MAIN tab is a "summary" of the data research and conclusions. To "read" the spread sheet, move from left to right. On the left are the six (6) Indicator Types of Social Capital. As you move to the right there are several columns. Each row is about an Indicator of social capital, with information about its Dimension, Function, Type, with data about that particular Indicator, and analysis of the Indicator's trends over time. A qualitative summary concludes the Indicator row.

Included are a series of columns that relates the social capital indicators to other indicators around climate action. For example, CEAP Indicators are included, which were taken from the COV CEAP initiative to respond to the Climate Emergency declared in 2019. This list is there to add context to how the social capital Indicators as they might relate to the CEAP Indicators. This is suppositional only.

Mobilization Outcomes are the current (preliminary) mobilization outcome indicator suggestions, and aligned to correlate to specific social capital indicators. They are outcomes of the Community Mobilization initiative at COV and generated over several workshops in the summer of '21. Mobilization Indicators are included as the current (preliminary) mobilization outcome indicator suggestions, and aligned to correlate to specific social capital indicators. For the sake of the Analysis Spreadsheet, included are newly generated or altered Indicators that are meant to relate Community Mobilization to Social Capital. The indicators there are possible ways to measure community mobilization in ways that are also related to social capital in future surveys or analyses.

If you are interested in qualitative SUMMARIES of the data and research, look for the blue text to give an overview of the findings.

Check out the ANALYSIS tab for detailed research findings about social capital. Also, check out the ANALYSIS Mobi tab for a data summary of the 2019 Greenest City Action Plan Survey (Sentis Market Research, 2019). Included is an Analysis Graphics tab, for *selected graphic representations for Indicator data trends from each Indicator Type.

2. *If your interest is about Community Mobilization:*

First, go to the MAIN-Mobi tab at the bottom of this Document. The tab is a "summary" of the data research and conclusions. To "read" the spread sheet, move from left to right. On the left are four (4) Outcomes of Community Mobilization, as determined through several workshops in the summer of 2021. To the right of this column are other columns that "fit" or relate to each Outcome. Each row is about an Indicator. All the indicators are aligned to each other as you move from left to right. So, the Mobilization Indicators should "relate" to the CEAP Indicators which should "relate" to the social capital indicators in that row. Such relations are correlated suppositionally, so they are not causally proven, but a "best" subjective fit. Since the bulk of this research is about social capital, the main Indicators to look for are the "Current Indicators of Social Capital."

There are several columns near the beginning about Community Mobilization. For example, Mobilization Indicators, which are the current (preliminary) mobilization outcome indicator suggestions, and positioned to correlate to specific social capital indicators. Then, there are CEAP Indicators, which were taken from the COV initiative to respond to the Climate Emergency declared in 2019. This list is here to add context to how the SC Indicators might relate to the CEAP Indicators. This is suppositional only. There also *Possible Indicators that might link or relate Community Mobilization to Social Capital. These indicators are generated or altered Indicators and are possibilities to measure community mobilization in ways that are also related to social capital.

The rest of the columns going from left to right are about social capital, and the data that was collected about social capital, with information about its SC dimension, function, type, data about that particular Indicator, and analysis of the Indicator's trends over time. A qualitative summary concludes the Indicator.

If you are interested in qualitative SUMMARIES of the data and research, look for the blue text to give an overview of the findings.

Check out the ANALYSIS Mobi tab for a data summary of the 2019 Greenest City Action Plan Survey (Sentis Market Research, 2019). Also check out the ANALYSIS tab for detailed research findings about social capital. There is also an Analysis Graphics tab, for *selected graphic representations for Indicator data trends from each Indicator Type.

3. *If your interest is about Social Capital Research Analysis:*

First, go to the ANALYSIS tab at the bottom of this Document. This tab reveals the main research findings. To "read" the spreadsheet, move from left to right. Rows about an Indicator of social capital are separated by grey lines, and each Indicator row has information about its SC dimension, function, type, source, data about that particular Indicator, and analysis of the Indicator's trends over time (including p-value tests with trending data significance. Note that each Indicator is weighted, based on its Proxy Code, sample size, test statistic, and p-value). A qualitative summary concludes the Indicator (please refer to the Report for specifics on Methods, etc.) .

On the left are the six (6) Indicator Types of Social Capital (“Buckets”), coded by different colours (i.e. dark green, lighter green, blue, purple, yellow, and orange). If you are interested in qualitative SUMMARIES of the data and research, look for the blue text to give an overview of the findings.

Check out the MAIN tab for a summary of the research findings about social capital. Also see the MAIN-Mobi tab for a summary of research findings of social capital as it fits in with community mobilization. Also, check out the ANALYSIS Mobi tab for a data summary of the 2019 Greenest City Action Plan Survey (Sentis Market Research, 2019). There is also an Analysis Graphics tab, for *selected graphic representations for Indicator data trends from each Indicator Type.

A Framework for Social Capital

For Community Mobilization to Climate Action

Credit: J. Cameron, Unsplash.