Abstract

On December 6, 2007, the Tsawwassen First Nation became the second First Nation in British Columbia to sign a modern treaty with the BC Provincial and Canadian Federal governments. Given the small number of Modern treaties in BC and how recent many of them are, little systematic attention has focused on outcomes or the effects of Aboriginal self-governance on well-being. Additionally, no research to date has focused on well-being and self-governance in the three modern treaty Nations in BC. To fill this gap in their own community, the Tsawwassen First Nation commissioned a survey measuring multiple aspects of well-being. The two chapters of this thesis are based on the qualitative and quantitative data collected for this survey over the summer of 2012, and as a whole, represent baseline analyses of well-being in the Tsawwassen community.

The thesis utilizes a well-being framework based on a standard Personal Well-being Index. It undertakes both quantitative and qualitative analyses of survey results focusing on the influence of Tsawwassen Members’ satisfaction with the health of the local environment on self-reported well-being, and finds that satisfaction with the health of the local environment is a highly statistically significant predictor of overall well-being in the Tsawwassen Community. The thesis also analyzes two seemingly paradoxical perspectives held in the community: that the health of the natural environment is important to the well-being of the community; and that development of Tsawwassen lands for commercial purposes will benefit the community. As these perspectives are often seen as at odds with each other, this thesis examines trust in the Tsawwassen Government, following the hypothesis that
trust relationships in the community, particularly trust in the Tsawwassen Government, acts as a mediator of the two perspectives. This analysis concludes that satisfaction with the health of the local environment along with trust, both generalized and institutional, positively influences well-being in the community.
Preface

Each chapter of this thesis is intended to be a stand-alone manuscript such as might be submitted for review by a scholarly journal. The Tsawwassen Well-being survey methodology and implementation were completed in partnership with the Tsawwassen First Nation and a UBC research team led by Dr. Ralph Matthews. The author completed the statistical analysis, discussion, and conclusion of the two empirical chapters in this thesis with supervisory and committee member support from Dr. Ralph Matthews and Dr. Hannah Wittman respectively.

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# Table of Contents

Abstract ................................................................................................................................. ii

Preface ................................................................................................................................ iv

Table of Contents .................................................................................................................. v

List of Tables ........................................................................................................................ vii

List of Figures ........................................................................................................................ viii

Acknowledgments ............................................................................................................... ix

1. Chapter 1: Introduction ................................................................................................... 1
   1.1. Why Treaties: A Brief History of Treaties and Aboriginal Self-Government in BC .................................................................................................................. 2
   1.2. The Tsawwassen First Nation ..................................................................................... 5
   1.3. The Study .................................................................................................................... 6

2. Chapter 2: Environment and Well-being ......................................................................... 8
   2.1. Introduction ............................................................................................................... 8
   2.2. Well-being ............................................................................................................... 11
       2.2.1. Measuring Well-being ....................................................................................... 13
   2.3. Context ..................................................................................................................... 19
       2.3.1. The Tsawwassen Well-being Study .................................................................. 19
       2.3.2. The PWI and Well-being in Tsawwassen ......................................................... 23
       2.3.3. Environment and Well-being ......................................................................... 24
   2.4. Quantitative Models ................................................................................................. 26
       2.4.1. Testing the PWI in Tsawwassen ..................................................................... 26
       2.4.2. Does Environment Influence Well-being in Tsawwassen ............................. 33
2.5. Discussion and Analysis ................................................................................. 39
  2.5.1. The Personal Well-being Index in Tsawwassen ........................................ 39
  2.5.2. Environment and Culture ........................................................................ 43
2.6. Conclusion ........................................................................................................ 48
3. Chapter 3: Trust as a Moderator of Perceptions of the Environment and
  Development on Tsawwassen Lands .................................................................. 51
  3.1. Introduction .................................................................................................... 51
      3.1.1. Context ................................................................................................... 53
  3.2. Environment and Development ..................................................................... 56
      3.2.1. Perception of Development ................................................................... 57
  3.3. Trust in Tsawwassen ....................................................................................... 62
      3.3.1. General and Institutional Trust ................................................................. 62
      3.3.2. Trust in the Tsawwassen Study ................................................................. 64
      3.3.3. Discussion: Components of Trust in Tsawwassen ................................. 68
  3.4. Trust and Well-being in Tsawwassen ............................................................... 72
      3.4.1. Well-being in Tsawwassen ..................................................................... 73
      3.4.2. Models .................................................................................................... 75
      3.4.3. Discussion and Analysis: Trust and Well-being ...................................... 81
  3.5. Conclusion: Development, Trust and Well-being ......................................... 84
4. Chapter 4: Summary of Conclusions .................................................................. 88
Works Cited ............................................................................................................. 92
List of Tables

Table 2- 1: Age of Members Sampled Compared to All Tsawwassen Members .....22
Table 2- 2: Place of Residence of Members Sampled Compared to All Tsawwassen Members........................................................................................................................................23
Table 2- 3: Regression Modelling Results - PWI Components in Tsawwassen ......32
Table 2- 4: Regression Modelling Results - Environment and Well-being Regression Models ...........................................................................................................................................39
Table 3- 1: Factor Analysis - Components of Generalized and Institutional Trust in Tsawwassen.............................................................................................................................................67
Table 3- 2: Regression Modelling Results - Well-being, Environment and Trust .....81
List of Figures

Figure 2- 1: Model 1 – Influence of PWI (Personal Well-being Index) Variables and Satisfaction with Life as a Whole ................................................................. 28

Figure 2- 2: Model 2 – Influence of PWI (Personal Well-being Index) Variables Plus Housing, Education, and Employment and Satisfaction with Life as a Whole... 30

Figure 2- 3: Model 3 – Influence of Gender, and Whether Respondents Live on Tsawwassen Lands and Overall Well-being ...................................................... 34

Figure 2- 4: Model 4 – Influence of Socio-economic Conditions and Control Variables on Overall Well-being ................................................................. 36

Figure 2- 5: Model 5 – Influence of Satisfaction with the Health of the Local Environment and Control Variables on Well-being ........................................ 37

Figure 3- 1: Model 1 – Influence of Gender, Whether Respondents Live on Tsawwassen Lands, Personal Income, High School Completion, Employment Status, Housing Repair, and Time of Interview on Overall Well-being .......... 77

Figure 3- 2: Model 2 – Influence of Satisfaction with the Health of the Local Environment and Control Variables on Overall Well-being ......................... 78

Figure 3- 3: Model 3 – Influence of Generalized and Institutional Trust and Control Variables on Overall Well-being ......................................................... 79
Acknowledgments

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Finally, thanks especially to Daniel. Let’s go to Japan!
1. Chapter 1: Introduction

The Tsawwassen First Nation signed a modern treaty (the Treaty) with the BC Provincial and Canadian Federal governments on December 8, 2006 legally taking effect on April 3, 2009. The Treaty came after more than 15 years of negotiation within the British Columbia Treaty Commission (BCTC) six-stage negotiation process. The Tsawwassen Treaty is the first treaty finalized under the BCTC process as well as the only urban treaty in BC. Currently there are two other modern treaties in BC that include self-government, the Nisga’a Treaty signed in 2000, negotiated outside the BCTC process and the Maa-nulth Treaty, effective April 2011, negotiated under the BCTC process with a combined group of First Nation Nuu-chah-nulth communities in the Barkley Sound area of Vancouver Island. Both the Yale and Tla’amin First Nations have reach a final agreement, but their Treaties have yet to been implemented. Additionally, the McLeod Lake Agreement was reached in 2000, which is essentially an addition to the historic Treaty 8 originally signed in 1899 but it does not include self-government. Given the small number of Modern treaties in BC and how recent many of them are, little systematic attention has focused on outcomes or the effects of Aboriginal self-governance on well-being, and no research to date on well-being and self-governance has focused on the three modern treaty Nations in BC.

To fill this gap in their own community, following the signing of the Treaty, Tsawwassen leadership approached Dr. Ralph Matthews from the University of British Columbia to develop a survey measuring multiple aspects of well-being, using indicators from existing surveys and indicators specific to the Tsawwassen
community. The goal of the survey was to provide Tsawwassen leadership with an understanding of the current levels of well-being in the community as well as provide a replicable tool to track changes in well-being over time as self-government and new programs and services progressed in the community. To fulfill this goal, a study was designed in partnership by Dr. Matthews, his team of researchers, and a committee of Tsawwassen Members, and implemented over the summer and fall of 2012. The two stand-alone papers that make up this thesis are based on data collected through this survey.

1.1. Why Treaties: A Brief History of Treaties and Aboriginal Self-Government in BC

While treaties such as Nisga’a, Tsawwassen, and Maa-nulth are recent history, the “land question is as old as British Columbia itself” (Tennant 1990, ix). Unlike the rest of Canada, BC has very few historic treaties. East of the Rockies, treaties were signed reflecting the principles set out in the Royal Proclamation of 1763. However, while First Nations in BC are subject to the Indian Act like the other Nations across Canada, the approach to colonization and treaties in BC was historically different. On Vancouver Island, between 1850 and 1854, fourteen treaties were signed between then Governor James Douglas, acting as an agent of the British Crown, and First Nations communities on Vancouver Island. In exchange for payment, title to unoccupied land was sold to Douglas, with the First Nations maintaining their village sites, enclosed fields, as well as their right to hunt on unoccupied lands and to carry out fisheries as before (Tennant 1990, 19). On the Mainland, however, no treaties were signed. Instead of extinguishing title, Douglas saw to the creation of reserves, setting aside village land and adjacent areas. While
the process of identifying and setting aside reserve land was very similar to the treaty agreements reached on Vancouver Island and there is documentation that when more reserve land was requested, it was provided, formal treaties were not signed (Tennant 1990). By not formalizing agreements, Aboriginal right to the land was left open to interpretation.

Joseph Trutch succeeded Douglas as Governor of BC in 1871. Unlike Douglas, Trutch asserted that the First Nations never owned the land in BC. He claimed the treaties on the Island were not treaties recognising Indian title, instead claiming they were:

made for the purpose of securing friendly relations between those Indians and the settlement of Victoria, then in its infancy, and certainly not in acknowledgement of any general title of the Indians to the land they occupy (Trutch qtd. in Tennant 1990, 40).

Trutch reduced the size of reserves justifying through multiple avenues, including the size of community (enumerated based on who was physically present when he came to the community) and unprofitable public interest of not using land for pasture and cultivation (Tennant 1990). When BC joined Canada in 1871, Trutch authored the terms associated with the trusteeship of First Nations by the Dominion Government, laying the foundations for the Indian Act of 1876.

The dialogue of treaties and self-government also has a long history in BC, particularly with the Nisga’a and T’simshain people for North-western BC. In 1881, a delegation of Nisga’a travelled to Victoria while a delegation of Tsimshian Chiefs travelled to Ottawa in 1885. In 1887, the concept of treaties were explicitly discussed when both the Nisga’a and Tsimshian Chiefs met in Victoria with Provincial and Dominion leadership. While the Chiefs specifically referenced desire for self-
government and treaty, BC Premiere Smithe dismissed their requests as misguided (Tennant 1990). The Nisga’a continued to prove their right to the Nass Valley in the court system including the Supreme Court rulings ‘Calder 1973’. Formal negotiations with the Federal Government began in 1976, while the negotiations with the Province did not occur until 1990 (Penikett 2006). The Nisga’a Treaty was initialled on December 2, 1998, given assent by the BC Legislature on April 23, 1999, and passed in Parliament on April 13, 2000. The Nisga’a Final Agreement came into effect on May 11, 2000, over 100 years after the Nisga’a people began lobbying for their treaty, becoming the first modern Treaty in BC.

The current BC Treaty Commission and the current six-stage negotiation process was born out of the recommendations of the British Columbia Claims Task force, established on December 3, 1990 in response to an announcement by the BC Premier Vander Zalm that Provincial Government intended to begin negotiating with First Nations (McKee 2009). The BC Treaty Commission was appointed on April 15, 1993 to act as the “keeper of the process” (McKee 2009). The commission is made up of five commissioners, of which two are appointed by First Nations, one by the Federal government, one by the BC government, and a Chief of Commission agreed to by the three parties.

There are currently 60 Nations participating in the BCTC process. The six stages of the process are described below with the number of Nations currently in that stage in parentheses:

- Stage One: Statement of Intent (SOI) to Negotiate
  - Identify the Nation and which people represent they represent,
  - Identify traditional territory, and
• Identify key contact person within the Nation.

• **Stage Two: Readiness to Negotiate (two Nations)**
  • First meeting with representatives from the First Nation, Federal, and Provincial governments held within 45 days of the submission of the SOI,
  • Determine level of preparedness for next stage of negotiation,
  • Develop a process to resolve overlapping claims.

• **Stage Three: Negotiation of a Framework Agreement (three Nations)**
  • A Framework Agreement is agreed-upon including an agenda of issues to be negotiated, goals of negotiation process, special procedural arrangements, and timetable for negotiations.

• **Stage Four: Negotiation of an Agreement in Principle (44 Nations)**
  • Series of negotiations that will form the treaty, and
  • The ratification process is defined.

• **Stage Five: Negotiation to Finalize a Treaty (six Nations)**
  • Concluding stage – legal and technical issues are resolved, and
  • Final agreement signed and ratified.

• **Stage Six: Implementation of the Treaty (Tsawwassen First Nation and Maa-nulth First Nations)**
  • Long-term implementation of the Treaty.

1.2. **The Tsawwassen First Nation**

The traditional territory of the Tsawwassen First Nation is located in the southwest corner of British Columbia and extends across what is today called
Richmond, Delta, Surrey, Langley and the southern Gulf Islands\(^1\). The Tsawwassen First Nation joined the BC Treaty Commission process December 16, 1993. Nearly 16 years later, the Tsawwassen First Nation became the first BC First Nation to reach Stage Six of the Treaty process, implementing their treaty on April 3, 2009 (BC Treaty Commission 2013).

Today, the elected Tsawwassen Government consists of thirteen members: one Chief, four Executive Council members, and eight Legislators. An Executive Council is made up of the four legislators receiving the highest number of votes and the Chief. The term of election is three years. Since the implementation of the Treaty on April 3, 2009, the Tsawwassen Government has implemented their self-governance system, held three general elections, and broken ground on several development projects, including a market housing development and a retail commercial complex\(^2\). Under the Treaty, individual Members are now also able to formally own parcels of land within the former Tsawwassen reserve.

1.3. The Study

This thesis consists of two self-standing papers (Chapter 2 and Chapter 3), both based on qualitative and quantitative data obtained through the Tsawwassen Survey. Chapter 2 focuses on the role of satisfaction with the health of the local environment on self-reported well-being in the Tsawwassen community. In this chapter, a well-being framework is defined based on the internationally utilized Personal Well-being Index (PWI), followed by OLS regression analysis of the influence of satisfaction with the health of the local environment on Tsawwassen

\(^1\) A map of the Tsawwassen Treaty Lands can be found in the following source: http://www.gov.bc.ca/arr/firstnation/tsawwassen/down/factsheet/lands.pdf

\(^2\) An artists rendering of the development projects on Tsawwassen Lands can be found in the following source: http://www.tsawwassenshores.com/masterplan/
Members self-reported well-being. This analysis is supplemented with thematic analysis of interview transcripts regarding how and to what extent Members perceive the environment as important to the well-being of the Tsawwassen Community.

Chapter 3 focuses on two seeming paradoxical perspectives held by Members: that the natural environment is important to well-being in the Tsawwassen community and that the commercial development of Tsawwassen lands will benefit the community. As these perspectives are often seen as at odds with each other, this chapter examines trust in the Tsawwassen Government, following the hypothesis that trust relationships in the community, particularly trust in the Tsawwassen Government, acts as a mediator of the two perspectives.

The conclusions of both these papers are summarized in the final section of this thesis. As a whole, these papers represent baseline analyses of well-being in the Tsawwassen community and provides insight into two of the factors that positively influence well-being in the community: satisfaction with the health of the local environment and trust.
2. Chapter 2: Environment and Well-being

2.1. Introduction

On December 6, 2007, the Tsawwassen First Nation became the second First Nation in British Columbia to sign a modern treaty (the Treaty) with the BC Provincial and Canadian Federal governments, and the first to sign through the BC Treaty Commission six-stage negotiation process. Improving the well-being of their Membership is a key goal of the Tsawwassen Government both before and after the implementation of the Treaty. In her historic speech to the BC Legislature on October 15, 2007, prior to debate and assent of the Treaty legislation, Tsawwassen Chief Kim Baird highlighted the symbol of reconciliation that the Treaty embodies. In doing so, she outlined the connection of the Tsawwassen community to their traditional territory and the country foods it provides, as well as the development and policies that marginalized the community. To Chief Baird, reconciliation was tied not just to the end of the Indian Act, but also to the opportunity to create the economic and infrastructure developments required to foster a healthy, independent, vibrant community. She stated:

The Tsawwassen treaty, clause by clause, emphasizes self-reliance, personal responsibility and modern education. It allows us to pursue meaningful employment from the resources of our own territory for our own people. Or in other words, a quality of life comparable to other British Columbians.” (Baird 2007)

However, little systematic attention has focused on outcomes or the effects of Aboriginal self-governance on well-being, and no research to date on well-being and

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3 While the Tsawwassen First Nation reached the Final Agreement of the Treaty on December 8, 2006, the Treaty had to be ratified through a community vote, then approved by both the BC provincial legislature and Federal parliament. The Tsawwassen community ratified the Final Agreement on July 25, 2007 with 69.5% of registered voters voting in favour. The Treaty legislation passed third reading of the provincial legislature on November 7, 2007 and received Royal Assent on November 22, 2007. The official signing ceremony was held on December 6, 2007 in Ottawa. The Treaty came into effect at 12:01 am on April 3, 2009 (British Columbia, n.d.).
self-governance has focused on the three modern treaty Nations in BC. To track the progress of their goal of improving the well-being of the Tsawwassen Members, in 2010 the Tsawwassen Government, in partnership with Dr. Ralph Matthews from the University of British Columbia, developed a survey measuring multiple aspects of well-being, using indicators from existing surveys and indicators specific to the Tsawwassen community.

Following the signing of the Treaty, the Tsawwassen leadership sought to understand current levels of well-being in the community as well as to track changes in well-being over time as self-government and new programs and services progressed in the community. The Tsawwassen wished to have a study undertaken of their community and individual well-being that fulfilled the following criteria:

- Produce qualitative and quantitative data;
- Be replicable, either in whole or part;
- Be consistent with well-being indicators used by the Canadian government;
- Cover a range of areas including those that are outside common understanding of well-being, including generalized trust, and trust in local government;
- Reflect criteria used in and be comparable with, other studies of Indigenous well-being done in such nations as Australia and New Zealand; and,

4 Nisga’a Nation, Tsawwassen First Nation, and Maa-nulth First Nations. The Yale First Nation and Tla’amin First Nation have signed a final agreements but have not yet implemented their treaties.
• Be consistent with and reflect Tsawwassen cultural values associated with well-being.

This required both an understanding of current indices and measures of well-being used in other global contexts, as well as the cultural values associated with well-being in the Tsawwassen community. The results of this survey provide a baseline understanding of well-being in the Tsawwassen community, laying the groundwork for longitudinal analysis of whether well-being changes as the treaty progresses. Using data collected from the well-being survey, this paper establishes a baseline measure of well-being in the Tsawwassen community, including those who live on and off the Lands ceded to the community under the Treaty agreement (the Tsawwassen Lands). In particular, it explores whether there is a link between satisfaction with the health of the local environment and well-being in the Tsawwassen community. The first section of this paper describes the Personal Well-being Index utilized in the study and examines the extent to which it is an appropriate measure of well-being in the Tsawwassen community. The second section explores well-being characteristics in the Tsawwassen community and the factors that describe variance in well-being, specifically examining how satisfaction with the health of the local environment influences overall well-being. The paper concludes by arguing that culture plays an important role in linking well-being and the environment in the Tsawwassen community and is an aspect of well-being that warrants further study.
2.2. Well-being

While well-being itself is a broad topic covering many different aspects of human life, this paper focuses specifically on the link between subjective well-being (i.e. how one feels about oneself), and the natural environment.

The existing well-being literature has repeatedly identified a link between human well-being and the environment. Russell et al. (2012, 475) (citing embodied cognition theory) notes that “the way in which we interact with our environment helps guide how we think and who we are – and thus impacts the core of our well-being”. Through their literature review, Russell et al. (2013) summarize the widespread literature around well-being and nature, identifying ten dimensions of human well-being that interact with well-being, including subjective well-being. However, the literature linking subjective well-being to the environment is less prevalent than some of the other nine dimensions. Russell et al. (2013, 491) note that several studies linking subjective well-being to the environment “demonstrate that connectedness to nature significantly predicts the participants’ degree of life satisfaction and overall happiness and perspective-taking ability”. For example, Ferrer-i-Carbonell et al. (2007) find that environmental awareness is connected to well-being. This conclusion is drawn from findings that there is a negative connection between concern regarding pollution (when controlling for actual exposure), and well-being as well as a positive relationship between well-being and concern regarding extinction of species. The second finding is linked to the argument that there is positive psychological benefit from caring for other species (Ferrer-i-Carbonell and Gowdy 2007). However, many of the studies cited by Russell et al. (2013) in relation to subjective well-being do not touch on the some of the cultural components that may
connect environment and well-being. In contrast, these will be a primary focus of this paper.

There is also a wide range of Ecosystems Services (ES) literature focusing on the integration of Cultural Services into the ES discussion, some of which includes linkages to well-being. Chan et al. (2012, 8) defines ES as “a framework provided to bridge the gap between ecology and economics… specifically, economic techniques are used to assign value to ecosystem components and functions”. Chan et al (2012) propose to “bring social perspectives and valuation techniques into ES frameworks” through cultural services (ibid). Similarly, Daniel et al. (2012) notes that “ESs arise when an ecological structure or function directly or indirectly contributes toward meeting a human need or want. Such services generate benefits that contribute to overall well-being” (8812) and defines cultural services as “nonmaterial benefits people obtain from the ecosystem” (8813). Further, Daniel et al. (2012) notes “natural or seminatural features of the environment are often associated with the identity of an individual, a community, or a society (8814). Sangha et al (2011) discuss the linkages between ES and Aboriginal well-being in North Australia, finding that the services derived from the ecosystem in the communities they worked with were largely cultural rather than provisional (i.e. addressing a basic human want or need). Cultural services identified by respondents in their study as derived from the ecosystem were identity, spirituality, and ceremonial. Provisional services identified included food and medicine, but were identified to a lesser extent (Sangha et al. 2011). Services were also gender specific and generational. This paper explores some of the cultural linkages between environment and well-being in the Tsawwassen community.
2.2.1. **Measuring Well-being**

In the general field of measuring well-being, many of the indices of well-being focus primarily on economic measures. However, one example that seeks to supplement economic measures with other forms of social data is the United Nations Development Program’s (UNDP) ‘*Human Development Index*’ (HDI). The HDI is a national level well-being score made up of the aggregated average of per capital income, life expectancy at birth, and education variables. The HDI represents well-being at the national level, providing single ratings that can be compared across nations, but is not intended to track change over time (Neumayer 2001: Zaim 2005). While per capital income is one of the three indicators, it is not weighted more highly than the education and life expectancy variables, reflecting the idea that “community characteristics such as education have inherent value above and beyond their relationship to material wealth” (McHardy and O'Sullivan 2004). Over time, the HDI has evolved to include other indicators. These include physical environmental indicators such as per capita carbon dioxide emissions (Neumayer 2001; Zaim 2005; United Nations Development Programme 2011), and sustainability (natural capital) (Neumayer 2001). Thus, the 2011 HDI included variables representing environmental sustainability, measured through a composite measure of sustainability, including source of primary energy supply, carbon dioxide emissions, pollution, and natural resource depletion and biodiversity. (United Nations Development Programme 2011). These indices measure sustainability as an aspect of well-being at a national level, allowing for cross-country comparison. However, as the indicators used are often tied to aggregated national level measures such as Gross Domestic Product, authors such as Miles et al. (2008) have argued they have
little utility at the local level, where well-being outcomes are more diverse. In their view, these indices have “narrow focus, poor regional applicability and/or problems inherent with their calculation and interpretation” (McHardy and O'Sullivan 2004; Miles et al. 2008).

Efforts have been taken in both Australia and Canada to adapt matrices such as the HDI to a more local level and identify indicators that reflect social and cultural issues in the target communities (McHardy and O'Sullivan 2004; Marks, Cargo, and Daniel 2006; Taylor 2007; Miles et al. 2008; Rust 2008; Cox et al. 2010). For example, the Community Well-being Index (CWB Index) established by Aboriginal Affairs and Northern Development Canada was specifically designed to measure and compare non-monetary aspects of well-being in First Nations and non-First Nations communities. However, once again the indicators used are generally mainstream measures of socio-economic well-being (McHardy and O'Sullivan 2004). For example, the key indicators that make up the CWB Index include income, education, housing, and labour force activity. The index was based on the HDI and uses data collected from the Canadian Census (McHardy and O'Sullivan 2004).

At the individual level, well-being can also be assessed through self-reported subjective well-being, or how one feels about their life. The Personal Wellbeing Index (PWI) is one of the most predominant subjective well-being indices. Developed by the International Wellbeing Working Group, the PWI measures well-being through eight life domains measuring specific aspects of life, including standard of living, health, life achievement, relationships, safety, community connectedness, future security, and spirituality (International Wellbeing Working Group 2006). The PWI measures well-being at the level of the individual and defines subjective well-being
as how one feels about one’s self. While the PWI measures well-being at the individual level, the results can be aggregated at the community level to show general trends in well-being. In Australia, the *Unity Wellbeing Index* survey, which includes the PWI questions, is regularly collected to measure and track changes in well-being at the national level (Cummins et al. 2011).

The eight standard PWI questions are normally ranked on a 0-10 Likert response scale describing 0 as completely dissatisfied, 5 as neutral, and 10 as completely satisfied, and include the following eight questions:

*Please tell me how satisfied you are with the following things in your life:*

1. your standard of living?
2. your health?
3. what you are achieving in life?
4. your personal relationships?
5. how safe you feel?
6. feeling part of your community?
7. your future security? and,
8. your spirituality or religion?

Additionally, PWI methodology includes the question “Thinking about your own life and personal circumstances, how satisfied are you with your life as a whole?”, which can be used to test the validity of the PWI. Also a 0-10 Likert scale, this question is not part of the PWI scale as the eight life satisfaction domains are considered to be “theoretically embedded” in the satisfaction with your life as a whole question (International Wellbeing Working Group 2006). When included, it should be asked prior to the eight PWI questions so responses are less likely to be
influenced by the response to the individual well-being components (International Wellbeing Working Group 2006). As the eight PWI domains are considered theoretically embedded in the life as a whole question, the validity of the domains can be tested through regression analysis using “the satisfaction with life as a whole” scores as the dependent variable. Additionally, this analysis can be used to test whether unique variables following the same structure (Likert scale question phrased as Please tell me how satisfied you are with …) explain other aspects of well-being not captured in the standard eight PWI domains.

According to the International Well-being Working Group PWI Manual (International Wellbeing Working Group 2006), the original eight domains consistently make a single factor and account for 50% of variation in overall life satisfaction in the Australian Sample. This finding is consistent with subsequent studies in Asia (Lau, Cummins, and McPherson 2005; Zhenghui and Davey 2009; Yiengprugsawan et al. 2010; Rato and Davey 2012).

For Western populations, Lau et al. (2005) report that generally the PWI mean score range between 70-80 on the percentage scale maximum. As of 2011, the PWI mean for Australia was 75.5 (Cummins et al. 2011). Results from Asia have shown lower mean scores. In Macao, Rato (2012) found a mean score of 64.4 with a range of 63-66.7, while in Hong Kong, Lau et al. (2005) reports a mean score of 65.9, and in Zhuhai City China, the mean score was 64.4 (Zhenghui and Davey 2009). Similarly, in Thailand, Yiengprugsawan et al. (2010) found a mean PWI score of 70.0. Ganglmair-Wooliscroft and Lawson (2008) found the PWI to measure the well-being for New Zealanders with European and Maori heritage ($R^2=.64$ for both samples), but the mean scores were found to be lower than the scale maximum
scores reported in other countries, with scale maximum scores of 68% for New Zealanders with European heritage and 65% for New Zealanders with Maori heritage. While there are no comparable PWI scores from a Canadian study, Statistics Canada includes the question “Using a scale of 0 to 10, where 0 means 'Very dissatisfied' and 10 means 'Very satisfied', how do you feel about your life as a whole?” in the 2011 General Social Survey (Statistics Canada 2011). The mean percent scale maximum for this question was 80.98 for Canada and 80.95 for British Columbia for the population as a whole (calculated from Statistics Canada 2011). The Statistics Canada General Social Survey data are not disaggregated for Aboriginal and non-Aboriginal Canadians in the datasets available to researchers.

Despite the evolution of the way well-being is measured, studies of well-being in First Nation and Aboriginal communities elsewhere in Canada and internationally have shown that definitions and ideas about well-being identified at the community level may not be captured in existing indices, particularly the more rigid models such as the CWB Index. Gibson (2012, 203) suggests that “different cultural notions… see well-being experienced, interpreted, and measured differently”. For example, a project completed for the Assembly of Manitoba Chiefs in 2008 by the International Institute for Sustainable Development found that key issues impacting well-being identified by the community included employment, cultural identity, education, security, housing, health, governance, and community services (Rust 2008). Similarly, in her study of well-being among the Barkindji Aboriginal people in Australia, Lorraine Gibson (2012, 203) notes that “there is, of course, much about cultural identity that is not, and indeed cannot, be verbalized, and which ‘goes without saying’”.

17
Of particular significance, given the focus of the paper on the relevance of environmental issues to well-being, Gibson (2012) notes that the Darling River, which flows through the Barkindji traditional territory, is linked closely with their perception of physical safety, cultural health, cultural identity and well-being. Similarly, Morrison (2011, 97) links indigenous access to traditional territory and environment with food security, which in turn has links to physical and emotional well-being. She states: “Indigenous cultures are shaped by our unique relationship to the land and food systems within our respective traditional territories”. In a similar manner, in her speech to the BC Legislature on October 15, 2007, prior to debate and assent of the Treaty legislation, Tsawwassen Chief Kim Baird exemplified the Tsawwassen’s relationship to the land, specifically highlighting the role of fish to Tsawwassen’s “cultural and social processes that are very important to our identity” (Baird 2007).

While there is a large literature linking nature and multiple aspects of human well-being, existing indices of well-being rarely include indicators reflecting the environment. When they are included, literature linking environmental to human well-being is often concerned with the biophysical characteristics that affect human health, for example air and water quality (Truckee Meadows 2008; Morgan 2011). Some literature also suggests that there are links to leisure time activity and well-being (often associated with outdoor recreation) as well as links between art and cultural practices and well-being (Smale et al. 2010; Morgan 2011). What is lacking from current understandings of well-being, including those that consider environmental variables, is the link between culture and environment, particularly with respect to well-being in First Nations communities.
2.3. Context

2.3.1. The Tsawwassen Well-being Study

In 2010, Dr. Matthews’ team of researchers joined a committee of Tsawwassen Government and community representatives (the survey committee) to collaboratively design an interview schedule and survey. During the survey design process, the team identified as relevant a wide range of existing survey questions and indices of well-being used by other statistical agencies (including Statistics Canada). In addition, the team developed questions that were of particular relevance to the Tsawwassen. In a series of meetings, the committee reviewed and modified survey questions to meet the project criteria as well as reflect Tsawwassen’s specific understandings of well-being. The final survey included both qualitative and quantitative questions measuring multiple aspects of well-being, including questions related to trust, social support, community and individual life satisfaction, land-use, institutional capacity, and personal health.

Survey questions derived from existing surveys and models of well-being are modelled after the following sources:

- basic demographic and socio-economic characteristics,
- questions about housing cost and quality from the Canadian Census (Statistics Canada 2006),
- trust matrices from the Canadian General Household Survey (Statistics Canada 2004),
- subjective well-being indices from the Personal Wellbeing Index (International Wellbeing Working Group 2006),
• Mental Health Inventory Five Item Questionnaire (Berwick et al. 1991),
• housing overcrowding from the Canadian Census reflecting the Canadian Mortgage and Housing Commission definition of overcrowding (Statistics Canada 2006), and
• employment characteristics from the Canadian Census (Statistics Canada 2006).

Survey questions unique to this study were developed to measure the following:

• social capital and reciprocity,
• cultural activities,
• traditional food collection and consumption,
• the institutional capacity of the Tsawwassen Government,
• sources of community information,
• social issues in the community,
• where the respondent live,
• physical health of the respondent,
• why people live where they do,
• experiences in school,
• perceptions of community health, and well-being, environment, governance, and the treaty, and
• improvements needed in the community.

Prior to the commencement of interviewing, the Tsawwassen Government sent introductory letters to all Tsawwassen Members over the age of 18 (N = 260)
explaining the relevance of the study and inviting them to participate. The Tsawwassen Government also employed a Tsawwassen Member to personally call each eligible Member to arrange a time to be interviewed. The project team, including Dr. Matthews and the interviewers (all of whom were UBC graduate students in Sociology or Resource Management and Environmental Studies) attended a Tsawwassen Community Retreat June 2 and 3, 2012 to introduce the study and begin interviewing. Over the summer of 2012, a team of graduate student interviewers, including myself, visited the community regularly to conduct interviews, and travelled to Vancouver Island, the Interior of BC, and Washington State to interview Members living off Tsawwassen Lands. Members unavailable for in-person interviews were offered the opportunity to complete the survey by phone. Each interview session consisted of open and closed-ended qualitative questions asked by the interviewer, followed by categorical survey questions that the respondents filled in on their own. Each interview took approximately 90 minutes to complete and was digitally recorded, transcribed and coded. In all, 156 interviews were completed constituting a 60.0 percent response rate.

As per the research agreement held between Dr. Matthews and the Tsawwassen First Nation, ownership of the data collected through this survey remains with the Tsawwassen First Nation. Dr. Matthews is the steward of the data and has the exclusive right to use the data for research and publication. This right can be extended to students working under his research supervision, including this thesis analysis. Prior to publication of research based on the survey data, the Tsawwassen will have the opportunity to review manuscripts for thirty days and
provide suggestions and guidance that the author may consider before publication. They do not have a veto right to any such analysis.

The population of Members sampled for the survey is strongly representative of the demographics of the Tsawwassen community. Table 2-1 below shows the distribution of Tsawwassen Member sampled by age category compared to the percentage of all Tsawwassen Members in the same age category.

**Table 2-1: Age of Members Sampled Compared to All Tsawwassen Members**

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of sampled TFN Members</th>
<th>Percent among sampled TFN Members</th>
<th>Percent among all TFN Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 to 24</td>
<td>33</td>
<td>21.2%</td>
<td>20.2%</td>
</tr>
<tr>
<td>25 to 34</td>
<td>38</td>
<td>24.4%</td>
<td>30.9%</td>
</tr>
<tr>
<td>35 to 44</td>
<td>24</td>
<td>15.4%</td>
<td>14.8%</td>
</tr>
<tr>
<td>45 to 54</td>
<td>30</td>
<td>19.2%</td>
<td>15.6%</td>
</tr>
<tr>
<td>55 to 64</td>
<td>23</td>
<td>14.7%</td>
<td>13.3%</td>
</tr>
<tr>
<td>65 to 74</td>
<td>5</td>
<td>3.2%</td>
<td>3.4%</td>
</tr>
<tr>
<td>75 to 84</td>
<td>3</td>
<td>1.9%</td>
<td>1.5%</td>
</tr>
<tr>
<td>85 and older</td>
<td>0</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>156</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The sample is also representative of where Members live. Approximately half of Tsawwassen Members live on Tsawwassen Treaty Lands while the majority of the other half live in the Lower Mainland of BC and in Washington State. As the survey methodology included a phone survey option, the sample reflects information gathered from Members not only living in and around Tsawwassen Lands, but also those living across Canada and the United States. Table 2-2 below shows the distribution of Members sampled by location of residence compared to the distribution of where Tsawwassen Members live.
Table 2-2: Place of Residence of Members Sampled Compared to All Tsawwassen Members

<table>
<thead>
<tr>
<th></th>
<th>Members interviewed</th>
<th>All Members (over age 18)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Tsawwassen Lands</td>
<td>83</td>
<td>53%</td>
</tr>
<tr>
<td>Lower Mainland and Vancouver Island</td>
<td>23</td>
<td>15%</td>
</tr>
<tr>
<td>Interior BC</td>
<td>8</td>
<td>5%</td>
</tr>
<tr>
<td>Rest of Canada</td>
<td>6</td>
<td>4%</td>
</tr>
<tr>
<td>Washington State and USA</td>
<td>36</td>
<td>23%</td>
</tr>
<tr>
<td>All areas</td>
<td>156</td>
<td>100%</td>
</tr>
</tbody>
</table>

2.3.2. The PWI and Well-being in Tsawwassen

The quantitative questions specifically addressing subjective well-being in the Tsawwassen Survey are from the Personal Well-being Index (PWI), outlined in section 2.2. The Tsawwassen study used a slightly modified version of the PWI, including the addition of three variables: Please tell me how satisfied you are with the following things in your life:

1. your education?
2. your job or employment situation?, and
3. your housing?

These questions are included in the survey as the survey committee identified them during survey development process as potentially important to well-being in their community. Moreover, rather than an 11-point scale, the PWI questions in the Tsawwassen survey are based on a 1-5 Likert scale, describing 1 as very
dissatisfied, 2 as dissatisfied, 3 as neither satisfied nor dissatisfied, 4 as satisfied, and 5 as very satisfied. The five-point scale is used to maintain consistency with the other scales in the survey. As the Tsawwassen survey is large, designed to take approximately 90 minutes to complete, including 12 different Likert scales, maintaining consistency across scales was identified as important to help respondents best understand and respond to the survey questions. Despite the different scale used, the data remain comparable to other PWI studies because the PWI methodology includes a mathematical formula to convert PWI scores collected using different Likert scales into a comparable statistic called “percentage of scale maximum”. This allows for comparison of data from different surveys regardless of the structure of Likert scales when the same PWI variables are measured. The PWI questions will form the basis of the well-being statistical modelling on which the analysis of this paper is based.

2.3.3. Environment and Well-being

As Gibson’s (2012) research exemplifies, Aboriginal well-being and culture are often closely associated with traditional territory, but as Gibson notes, it often goes without saying. In the Tsawwassen well-being study, there are both qualitative and quantitative survey questions that directly address Tsawwassen Member’s relationship with the environment. Two scale questions included in the survey directly address the link between culture and the environment that was highlighted by Gibson and Morrison as of critical importance. Out of 155 respondents in the Tsawwassen study, 151 (97.4%) agreed or strongly agreed with the statement, “The natural environment is important to my culture”, and 144 (92.9%) of respondents
agreed or strongly agreed with the statement, “The natural environment is important to who I am”. No respondents “disagreed” with either of these statements.

While the answers to the questions noted above make it clear that the environment is of critical importance to the Tsawwassen people regardless of whether they live on or off Tsawwassen Lands, the near unanimity of their responses to these two questions makes it impossible to statistically examine the relationship between environment and well-being using those measures. However, the interview did contain other measures of environmental values and well-being that have more variance of response and can therefore be used to provide insight into that relationship.

No environmentally focused PWI style variable was included in the Tsawwassen study. However, the question “Please tell me how satisfied you are with the following things in your community: the health of the local environment” was included in the survey. This question will be used in the following analysis as a primary indication of environmental satisfaction in regression modelling analysing the relationship between satisfaction with the environment and individual well-being in the context of other socio-demographic variables included in the regression models.

Additionally, the influence of the environment on well-being is directly explored through qualitative analysis. Questions including “Do you think that the natural environment around the Tsawwassen community contributes greatly to its well-being and quality of life?” and a follow-up question “Why do you say that?” address the link between environment and well-being. However, unlike the regression analysis where the focus is on respondents’ personal satisfaction with the environment local to them, regardless of where they live, the wording of the more
Thus, the following analysis involves three parts. In the first, two OLS regression models will be used to verify whether the PWI variables accurately reflect well-being in the Tsawwassen community, including whether the additional variables reflecting education, employment, and housing strengthen the aggregated PWI model in the Tsawwassen community context. Next, three new regression models will be specified to examine the influence of the perceived health of the local environment to the respondent’s perception of well-being. For this analysis, the well-being dependent variable will be a scale variable created by combining the relevant PWI variables tested in models 1 and 2. Finally, thematic analysis of qualitative data focuses specifically how the natural environment within Tsawwassen Lands is perceived by the respondent to influence the well-being of the community as a whole.

### 2.4. Quantitative Models

#### 2.4.1. Testing the PWI in Tsawwassen

This study utilizes OLS Regression analysis to test whether there is a linear relationship between a number of independent continuous variables, and well-being. Each model is discussed in detail below. In most cases, nested models are used to test whether the addition of further variables statistically improves explanation of variation in the model. All statistical analyses were completed using SPSS software.

All applicable model diagnostics were completed for each individual regression model to confirm the OLS model assumptions are met and the models
are correctly specified. All models met relevant traditional thresholds for applicable assumptions. Statistical tests completed to confirm no violations of OLS assumptions include:

- Durbin-Watson test to confirm independence of observations,
- Plotting of studentized residuals to confirm assumption of linear relationship between the dependent and independent variables and homoscedasticity of residuals,
- VIFF statistics to confirm there is no collinearity among independent variables,
- Casewise diagnostics for outliers in the dataset,
- Leverage points and Cook’s D for influential cases in the dataset, and
- P-P Plots for normal distribution of standardized residuals.

2.4.1.1. **Models 1: The PWI in Tsawwassen**

Model 1 tests the validity of the PWI in the Tsawwassen sample by testing how much variation in the dependent variable *satisfaction with your life as a whole* is explained by the eight PWI questions. Figure 2-1 below shows relationships tested in the specified model:
Before running this model, however, Cronbach’s Alpha analysis of the PWI variables was used to confirm the PWI variables are reliable and all measure the same underlying concept, well-being. Cronbach’s Alpha analysis measures the internal consistency and reliability of scale items on a 0-1 range. Trobia (2008) suggests that a score between 0.70 and 0.90 for confidence is appropriate for scale reliability. The Cronbach’s Alpha score for the PWI 8-scale questions in the Tsawwassen survey is .779, which is nicely centred within the normal range (.70 - .85) predicted by the International Well-being Working Group (2006) suggesting the PWI scale is an appropriate measure of well-being in the Tsawwassen community. Next, the calculated percentage Scale Maximum (mathematical formula to convert
PWI scores into standardized, comparable terms) is tested to confirm the scale is comparable to the expected outcomes of PWI models specified in other communities world-wide. The percentage Scale Maximum for the Tsawwassen community is 68.18%, which is below the expected mean score for Western Nations (Lau, Cummins, and McPherson 2005), but higher than the mean reported in Asian case studies (Lau et al. 2005; Zhenghui and Davey 2009; Yiengprugsawan et al. 2010; and Rato 2012). Compared to the 2011 Canadian General Social Survey sample, the percent scale maximum for the question “satisfaction with life as a whole” for the Tsawwassen participants was 70.5% which is approximately 10 percentage points below the percent scale maximum for BC (80.95%) and Canada (80.98%) (calculated from Statistics Canada 2011).

Table 2-3 shows the regression analysis testing how much variation in the dependent variable satisfaction with your life as a whole is explained by the eight PWI questions. The analysis suggests that 56.8% of the variation in personal well-being is explained by the 8 PWI variables, which is highly statistically significant (p<0.001) (see Table 2-1, Model 1). The domains contributing the most variation include satisfaction with: what you are achieving in life (p<0.001), personal relationships (p<0.001), overall standard of living (p<0.05), and feeling part of your community (p<0.05).

2.4.1.2. Model 2: Revising the PWI

Model 2 tests whether more variation in satisfaction with your life as a whole is explained when the three additional independent variables requested by the Tsawwassen Survey Committee (i.e. satisfaction with housing, education, and
When the three additional subjective well-being questions included in the Tsawwassen survey are added to the standard PWI questions, the Cronbach’s Alpha score for the Tsawwassen sample increases to .833 with all three items maintaining internal reliability with the original PWI variables. When the three additional independent variables included in the Tsawwassen study (education, housing, and job or employment status) are added to the PWI components tested in regression model 1, analysis show that 57.6% of variation in satisfaction with your life as a whole is explained by the eight PWI variables and the three additional variables (see Table 2-3, Model 2), which is statistically significant (F=17.534, p<0.001). However the additional variables only explain an additional 0.8% of
variance and make no statistically significant improvement to the PWI model. This suggests that education, employment, and housing do not statistically influence the variable “satisfaction with life as a whole” for the participants in the Tsawwassen community in comparison to the PWI variables\(^5\).

These findings suggest that the eight-domain PWI scale as defined by the International Well-Being Group is a valid indicator of well-being in the Tsawwassen community. Given this finding, a scale combining the eight domains of the PWI will be the dependent variable representing well-being in later sections of this paper.

As the Tsawwassen survey committee specifically identified these three factors as potentially as important to well-being during the survey design process, but the variables do not appear to explain statistically significant variation in “satisfaction with life as a whole”, I hypothesize that these factors are captured in one of two ways, both of which are tested in further analysis in this study. The first hypothesis is that actual achieved education levels, employment status, and housing quality influence variation in actual levels of individual well-being as independent variables rather than embedded in well-being itself. If this is not the case, my second hypothesis is that these factors are embedded within the individual PWI components themselves (see section 2.5.1 for further discussion and analysis). As such, the analysis in the next section of this paper exploring the factors that may describe variation in well-being will include independent variables representing achieved levels of education, current employment status, and perception of quality of housing.

\(^5\) If the same regression analysis is performed testing only on the influence of housing, education, and employment situation on satisfaction with life as a whole, 21.7% of variation is explained (F\(=\), 13.44, \(p<.001\)) with employment situation as statistically significant (\(p<.001\)) component. However, when the eight PWI variables are added to the regression model, the significance of the influence of housing, education, and employment is lost and the significance of each individual PWI component is similar to the results shown in Table 2-3.
Table 2-3: Regression Modelling Results - PWI Components in Tsawwassen

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Standard Error</td>
<td>B</td>
<td>Standard Error</td>
</tr>
<tr>
<td>Constant</td>
<td>.259</td>
<td>.319</td>
<td>.289</td>
<td>.321</td>
</tr>
<tr>
<td>1. Your overall standard of living</td>
<td>.168*</td>
<td>.068</td>
<td>.165*</td>
<td>.073</td>
</tr>
<tr>
<td>2. Your current health</td>
<td>.113a</td>
<td>.060</td>
<td>.111c</td>
<td>.060</td>
</tr>
<tr>
<td>3. What you are achieving in life</td>
<td>.361***</td>
<td>.063</td>
<td>.327***</td>
<td>.069</td>
</tr>
<tr>
<td>4. Your personal relationships</td>
<td>.240***</td>
<td>.056</td>
<td>.236***</td>
<td>.056</td>
</tr>
<tr>
<td>5. How safe you feel</td>
<td>-.002</td>
<td>.056</td>
<td>-.012</td>
<td>.056</td>
</tr>
<tr>
<td>6. Feeling part of your community</td>
<td>.127*</td>
<td>.057</td>
<td>.117d</td>
<td>.062</td>
</tr>
<tr>
<td>7. Your future security</td>
<td>-.113b</td>
<td>.064</td>
<td>-.133*</td>
<td>.067</td>
</tr>
<tr>
<td>8. Your spirituality or religion</td>
<td>.066</td>
<td>.063</td>
<td>.078</td>
<td>.065</td>
</tr>
<tr>
<td>9. Your education</td>
<td></td>
<td></td>
<td>.013</td>
<td>.065</td>
</tr>
<tr>
<td>10. Your housing</td>
<td></td>
<td></td>
<td>-.028</td>
<td>.055</td>
</tr>
<tr>
<td>11. Your job or employment situation</td>
<td></td>
<td></td>
<td>.086</td>
<td>.055</td>
</tr>
<tr>
<td>R²</td>
<td>.568</td>
<td></td>
<td>.576</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>23.807***</td>
<td></td>
<td>17.534***</td>
<td></td>
</tr>
<tr>
<td>Δ R²</td>
<td></td>
<td>.008</td>
<td></td>
<td>.917</td>
</tr>
</tbody>
</table>

N=154, p<0.05*, p<0.01**, p<.001***, a statistical significance was not achieved, but B had an accompanying p-value of .063, b statistical significance was not achieved, but B had an accompanying p-value of .078, c statistical significance was not achieved, but B had an accompanying p-value of .067, d statistical significance was not achieved, but B had an accompanying p-value of .063
2.4.2. Does Environment Influence Well-being in Tsawwassen

To further explore the relationship between environment and well-being, a series of OLS regression models testing how much variation in well-being is explained by satisfaction with the health of the local environment, once a series of control and independent variables are specified. The dependent variable, well-being, is a scale variable combining the eight PWI satisfaction variables tested in the first section of this paper.

2.4.2.1. Model 3: Control Variables

The first model specified for this analysis is Model 3, which measures the variation in overall well-being described by the variables, gender and whether respondents live on or off Tsawwassen treaty Lands, which will become control variables in the following models. The independent variables tested in Model 3 will become control variables in the subsequent models because they represent two ways that the Tsawwassen community is split nearly in half. Demographically, half of the population is male and half is female. Additionally, only half of Tsawwassen Members 18 years or older live on Tsawwassen Treaty Lands. This represents an aspect of life that could result in very different experiences and influences on well-being. Model 3 tests the variation in overall well-being explained by gender and whether respondents live on Tsawwassen Lands. Figure 2-3 below is a visual representation of the relationship between the independent and dependent variables tested in the regression model.

---

6 Gender is a dummy variable with 0 representing males and 1 representing female. The variable representing where respondents live is also a dummy variable, with 0 representing Members who live on Tsawwassen lands and 1 those who live off Tsawwassen Lands.
Table 2-4 at the end of this section shows the results of the regression modelling. Model 3 suggests that only 2.8% of variation in overall well-being is explained by gender and whether Members live on Tsawwassen lands. Generally, the model shows that females have lower levels of self-reported well-being than do males, and that those living off Tsawwassen Lands have higher levels of self-reported well-being than those who live on lands, but these differences do not statistically significantly describe variation in well-being. Further review of the data suggests there are a small number of outliers, which influence the overall PWI score for both females and those who live on lands.

While gender and whether respondents live on Tsawwassen Lands are not statistically significant to the well-being regression model, they will be included in the subsequent nested regression models as control variables. By including the binary variable for gender and whether respondents live on Tsawwassen Lands, any
variation associated with these factors is controlled or ‘held constant’, in the analysis so only the variation associated with the variables of interest is measured.

2.4.2.2. **Model 4: Control Variables and Socio-economic Indicators**

Model 4 tests whether the independent variables representing selected socio-economic variables, income\(^7\), housing\(^8\), education\(^9\), and employment\(^10\) describes variation in well-being when the control variables identified in Model 3 are held constant.

The housing, education, and employment variables are included in this model as the survey committee identified these factors during the survey design process as potentially important to well-being in their community. Rather than including these variables as satisfaction variables, achieved levels of education, current employment status, and perception of quality of housing are used. Personal income is also included in this analysis because economic indicators are often key components of well-being models, including, for example, the HDI and CWB. These four independent variables will be used as control variables in the final regression model, Model 5. Figure 2-4 below is a visual representation of regression model 4.

---

\(^{7}\) The personal income variable is a categorical variable measuring income brackets ranging from $0-9,999 to $150,000 and above.

\(^{8}\) The housing variable is a dummy variable with 0 representing housing in need of minor repair (e.g. missing or loose floor tiles, bricks, or shingles, defective steps, railings, or siding) or major repair (e.g. defective plumbing or electrical wiring) and 1 representing no housing repair needs.

\(^{9}\) The education variable is also a dummy variable with 1 representing completion of high school or high school equivalence (General Education Development or GED) and 0 representing no high school completion.

\(^{10}\) The employment dummy variable represents whether respondents are employed or self-employed, with 1 representing people who are employed or self-employed and 0 representing those who are not employed.
The results of Model 4 shown in Table 2-4 at the end of this section, suggest that while 10.1% of variation in overall well-being is explained by personal income, high school completion, employment status, and need for housing repairs. While none of the variables explain statistically significantly variation in well-being on their own, combined the model is a mildly statistically significant ($F=2.596$, $p<0.05$) predictor of variation in overall well-being when well-being is defined through the PWI.

2.4.2.3. Model 5: Well-being and the Environment

The final regression model, Model 5, tests whether satisfaction with the health of the local environment describes variation in well-being when the variables tested in models 3 and 4 are held constant as control variables. The independent variable representing the environment is the scale responses to the question: “Please tell me
how satisfied you are with the following things in your community: The health of the local environment?”. The question is answered on a five-point Likert scale with one being very dissatisfied and five being very satisfied. This model tests the hypothesis that satisfaction with the health of the local environment describes variation in well-being. Figure 2-5 below shows the relationships tested in Model 5.

**Figure 2-5: Model 5 – Influence of Satisfaction with the Health of the Local Environment and Control Variables on Well-being**

The output of Model 5 shows that satisfaction with the health of the local environment is a statistically significant (p<0.001) predictor of PWI well-being when controlling for gender, whether Members live on or off lands, personal income, high school completion, employment status, and need for housing repair. The model explains 29.3% of variation in well-being when well-being is defined through the PWI and independent of the influence of the control variables. Additionally, high school completion becomes statistically significant when satisfaction with the health of the
local environment is added to the model. This suggests there is an interaction between education and satisfaction with the health of the local environment that highlights the importance of education on well-being. As education is a control variable, the variance measured in Model 3 is associated with the addition of the environmental variable to the analysis. While the difference in educational attainment is not statistically significant to well-being on its own, the influence becomes statistically significant when the environmental variable is added to the analysis. Table 2-4 shows the results of the three nested models. This may be similar to the findings of Ferrer-i-Carbonell et al. (2007) suggesting that environmental awareness is positively connected to well-being. This would explain why the education variable only becomes statistically significant when satisfaction with the health of the local environment is added to the analysis as the relationship to well-being is specifically linked to the interaction between education and the environment.
Table 2-4: Regression Modelling Results - Environment and Well-being Regression Models

<table>
<thead>
<tr>
<th></th>
<th>Model 3</th>
<th></th>
<th>Model 4</th>
<th></th>
<th>Model 5</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>S.E</td>
<td>B</td>
<td>S.E</td>
<td>B</td>
<td>S.E</td>
</tr>
<tr>
<td>Constant (Well-being)</td>
<td>30.211</td>
<td>0.725</td>
<td>29.453</td>
<td>1.262</td>
<td>22.674</td>
<td>1.576</td>
</tr>
<tr>
<td>Gender</td>
<td>-1.284</td>
<td>0.841</td>
<td>-1.332</td>
<td>0.850</td>
<td>-0.798</td>
<td>0.761</td>
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<tr>
<td>Live on Tsawwassen Lands</td>
<td>1.281</td>
<td>0.814</td>
<td>0.782</td>
<td>0.830</td>
<td>-0.186</td>
<td>0.755</td>
</tr>
<tr>
<td>Personal Income</td>
<td>0.104</td>
<td>0.171</td>
<td>0.183</td>
<td>0.152</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Completion</td>
<td>1.521</td>
<td>0.871</td>
<td>1.689*</td>
<td>0.776</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed or Self-employed</td>
<td>0.898</td>
<td>0.899</td>
<td>0.712</td>
<td>0.801</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housing repairs of all kind needed</td>
<td>-1.517*</td>
<td>0.818</td>
<td>-0.726</td>
<td>0.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction with the Health of the Local Environment</td>
<td></td>
<td>2.002***</td>
<td>0.327</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.028</td>
<td></td>
<td>0.101</td>
<td></td>
<td>0.293</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>2.079</td>
<td></td>
<td>2.596*</td>
<td></td>
<td>8.176***</td>
<td></td>
</tr>
<tr>
<td>R² Δ</td>
<td>0.072</td>
<td></td>
<td>0.192</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F Δ</td>
<td>2.801*</td>
<td></td>
<td>37.564***</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n=146  p<0.05*, p<0.01**, p<.001***, * statistical significance was not achieved, but B had an accompanying p-value of .066

2.5. Discussion and Analysis

2.5.1. The Personal Well-being Index in Tsawwassen

The results of the regression analysis testing the validity of the PWI in the Tsawwassen community show that the eight basic PWI domains accurately reflect well-being in Tsawwassen. Of the eight domains, these four explain statistically significant variation overall life satisfaction:

- satisfaction with what you are achieving in life (p<0.001),
- satisfaction with personal relationships (p<0.001),
- satisfaction with overall standard of living (p<0.05) and,
- satisfaction with feeling part of your community (p<0.05),
Additionally, two of the PWI components do not achieve statistical significance, but have p-values slightly over the 0.05 significance threshold, including:

- satisfaction with your current health (p=.067) and
- satisfaction with feeling part of your community (p=.063),

The PWI components satisfaction with how safe you feel and satisfaction with your spirituality or religion, are not statistically significant to the regression model.

Satisfaction with housing, level of education, and employment situation, the three domains identified by the Tsawwassen as potentially important to well-being, are neither found to statistically significantly contribute to the PWI well-being scale (beyond the original eight variables) nor found to describe variation in the aggregated PWI well-being scale. While these domains may fit into some of the broader domains included in the PWI (i.e. education and employment status may influence the component “satisfaction with what you are achieving in life” and housing may influence “satisfaction with overall standard of living”), they do not statistically improve the PWI model specified in this study. When included as independent variables in the regression models exploring variation in well-being, education, employment, and housing taken as a unit, explain a small amount of variation in overall well-being, but none of the variables are significant on their own.

Education is only found to be statistically significant when satisfaction with the health of the local environment is also included as an independent variable. Income was also found to not statistically significantly explain variation in well-being in any of the models tested. While statistical regression analysis does not suggest that quality of housing and employment situation describe variation in well-being in a statistically
significant manner, coding and frequency analysis of the more qualitative responses to the open ended questions suggests that they do influence the well-being of individual Members.

2.5.1.1. Housing and Employment

The type of categorization and statistical modelling employed to this point, while providing knowledge of the overall pattern of relationships among variables, tends to downplay the values and attitudes of sub-groups in the community. That is, a limitation of statistical modeling is that the diversity of voices can get lost. When qualitative data are examined more closely with an eye to identifying less common concerns, important patterns emerge that are not clearly identified in the statistical analysis. In particular, there are notable sub-patterns with regard to the impact of housing and the combined impact of employment status and income on the well-being of some respondents, two of the components the Tsawwassen Government highlighted as potentially important to well-being during the survey design phase.

First, examining the importance of housing to subjective well-being, four Members highlighted problems with the Tsawwassen Government rental policy that have negatively affected their lives or the lives of those around them. For example, this female Member who lives off lands highlights problems she sees with the quality of rental housing she sees in the community. “Their houses need renos. They need other little stuff in their places, and it’s not being addressed” (TFN 420).

Three others mentioned housing related changes positively influencing their life over the past year (i.e. “I moved into my house. That made it [my life] better.” TFN 134, female, off Lands) and another two mentioned negative housing influences, particularly in relation to the rental housing policy on Lands (“‘cause they
changed my agreement... I’m in the hole for $7,000, stressed out, and it’s causing health problems" TFN 603, female, on-Lands).

Clearly, satisfaction with their housing or the policy around their housing, affects these Members’ personal well-being. However, the issue of housing is either something that does not affect a large portion of the community in a way that statistically significantly describes variation in Members well-being, or there is little variation in how housing affects Member generally. What is clear, however, is that the regression models show the relationship between housing in need of repair and well-being is negative (the B value for the housing variable is negative), and that those whose housing affects their well-being are negatively affected.

Similarly, nine Members indicated changes in employment positively influenced their lives over the past year, while one Member noted negative employment influences. For example, this youth expresses excitement with the prospect of new work positively influencing her life: “Yeah, so my sobriety, my relationship, my employment which is really recent, but I’m really ecstatic about it ” (TFN 601, female, off Lands)

Additionally, six Members indicated positive changes in their income or financial situation while two noted negative changes that affected their lives over the past year. Again, the impact of employment and income changes on these individuals is not readily apparent from the statistical modelling. Like satisfaction with housing, employment and income do affect a small number of Members' personal well-being, but are not widespread enough to influence the larger regression models.

The combined analysis of the quantitative and qualitative data highlights both the strength and the weakness of the PWI model methodology. On the positive side,
a strength of the PWI model is that it distils a complex concept into eight measurable components that reliably assess well-being in a comparable way across different cultures and communities. In particular, the Tsawwassen case study using the PWI model demonstrates that well-being is more complex than the tangible, easily measurable indicators such as those often used to measure well-being (i.e. income as in the HDI, housing, education, employment in the CWB). While indicators such as income, housing, education, and employment are likely important to specific aspects of life as well as the ability for individuals to meet their basic needs, they neither define nor explain subjective well-being on their own.

This raises questions as to how best address the goal of increasing well-being in the Tsawwassen community, particularly as the most statistically significant predictor of well-being among the variables tested is satisfaction with the health of the local environment. Notably, the Tsawwassen Government is already mindful of environment and culture when they develop programs and policy. However, further research may be needed into whether more tangible, measurable parameters such as income, education, employment, and housing quality influence specific domains of well-being, (e.g. life achievement, personal relationships, standard of living, and feeling part of the community), rather than whether they influence well-being on the whole.

2.5.2. Environment and Culture

The results of Model 5 suggest that satisfaction with the health of the local environment strongly and statistically significantly describes variation in well-being in a positive manner. As the control variable, “Live on Tsawwassen Lands” is not statistically significant in the model, this suggests that the pattern of positive
influence of satisfaction with the health of the local environment extends to all Tsawwassen Members, regardless of where they live. The environmental satisfaction variable used in the regression analysis is worded “satisfaction with the health of the local environment” which assumes assessment of the environment in which the respondents are currently living, which in half of the cases is not the Tsawwassen community. However, the qualitative question “Do you think that the natural environment around the Tsawwassen community contributes greatly to its well-being and quality of life?”, also illustrates very high level of agreement, suggesting a strong connection to the Tsawwassen environment regardless of where respondents live.

Out of 150 valid responses to this question, 101 (67.3%) responded yes, with 16 (10.7%) responding they did not think the environment contributes to well-being of the Tsawwassen community, while 19 (12.6%) gave a mixed response, and 14 (9.3%) did not know. Thematic analysis of the positive responses highlighted the link between the environment and the liveability of the Tsawwassen community (33 of 101 responses) and the link between the environment and Tsawwassen culture and identity (24 for 101 responses). The following analysis delves deeper into these themes.

Specifically, there is a clear link between culture, identity and the environment. When asked for their level of agreement with the statement “The natural environment is important to my culture”, 97.4% of respondents agreed or strongly agreed with the statement. Similarly, 92.3% of respondents agreed or strongly agreed with the statement “The natural environment is important to who I am”. Given the near unanimity of these responses, there is clearly a strong link
between satisfaction with the health of the local environment, culture, and identity in determining the well-being of Tsawwassen members. Notably, this relationship remains strong for both those living on and off of the Tsawwassen Lands.

As Daniel et al. (2012, 8814) note in their work on Cultural Ecosystem Services, “cultural heritage is inextricably linked with historical relationships between human societies and ecosystems. Cultural landscapes are vessels of cultural values and contribute to the identity of communities”. It is this relationship that many respondents draw upon when asked whether the environment influences well-being in their community. Twenty-four of 101 respondents specifically linked environment and well-being directly to their cultural identity. This Member directly highlights this link:

“I think the natural environment is part of our culture— it’s part of our history and our heritage and it does something, I think, for your spirit. It makes you—happier” (TFN 326, female, off Lands).

Another Member links environment, not just to well-being, but also specifically to the community: “Oh, it’s a common connection point… I want to say it brings peace to people (TFN 504, female, off Lands).

The link between environment, well-being, and culture is also reflected by those who did not believe the existing environmental conditions contribute to the well-being of the Tsawwassen community. These respondents often cited concern with the loss of environmental quality due to existing and planned developments on or near Tsawwassen Lands, and highlight the importance of the land to Tsawwassen culture. Twelve of 35 negative or mixed assessments of the role of the environment to well-being are generally framed around how the degradation of the environment around Tsawwassen limits the ability to continue traditional land practices, which
therefore negatively influences well-being. A good case in point is contained in this exchange between the interviewer and a male Member:

A: I really think that [the coal port] does [negatively affect the environment] because we don't have any more clams since the Delta port and the ferry causeway. You know, we still got crabs, but I don't even know if anybody's even tested any of those crabs for the toxic stuff that's going on in the ocean right now. ... When I was five years old, we used to go out there and dig clams. We don't do that anymore.

Q: So basically what you're saying is yes, the natural environment does contribute, but the industrial development has interfered with that connection?

A: Yes. (TFN 114, male, on Lands).

When asked why environment was important to well-being, many Members were unable to articulate a clear response to the question. This is similar to Gibson's (2012) finding among the Barkindji Aboriginal people in Australia. While they ‘knew’ the environment was important to them, respondents had difficulty explaining why, as the connection is so innate. As Gibson suggests (2012, 203), the link between the environment and culture, in many ways, “goes without saying” . However, there are some for whom the feeling is conscious. One Member, a female youth, specifically referenced this innate relationship between First Nations culture, including her own, and the environment:

Nature is an important part of Aboriginal heritage, and I like to think that with every culture there are certain things that are valued even if you don’t realize it on a conscious level. First Nation people are connected to nature in a different way than say another culture would be... I just think that the environment should be taken care of. (TFN 514, off Lands).

Other Members highlight this finding simply in how they experience difficulty in responding to the questions. For example, this Member describes her views regarding the relationship between environment and well-being:
“It’s [the environment] basically a part of us. It should be well taken care of because it has to do with our children’s future too. That’s a hard question to explain” (TFN 508, female, live on Lands).

This statement also highlights a future oriented aspect of culture and the environment. The link between environment and well-being is not just seen as important to the current generation, but to future Tsawwassen Members as well. Another Member highlights his holistic view of well-being in his response to the question, “Is being a member of the Tsawwassen First Nation important to you?":

Because …we’ve been here since time immemorial, so it’s important that we’re here -- because of the river and the oceans and the land, right. And it’s important that we respect that and, you know, we’re here to preserve that-- in our culture, our traditions. It’s important that we teach our youth, become an elder and teach” (TFN 430, male, live on lands).

The PWI does not include a variable representing satisfaction with culture and a similar variable was not included in the Tsawwassen survey in relation to well-being. If environment and culture are as closely tied as the analysis in this paper suggests, cultural satisfaction may be an important explanatory factor in overall well-being for the Tsawwassen community that is not included in either the PWI or the Tsawwassen survey, and therefore the regression modeling in this study. Given the findings of Rust (2008), Houkamau and Sibley (2011), and Gibson (2012) that higher levels of culture identity and/or cultural efficacy positively influence well-being in the Aboriginal communities with which they worked, a specific cultural variable may be a missing link in the Tsawwassen well-being analysis. While the environment is shown to be closely associated with culture, it is just one facet of culture in the Tsawwassen community. If the Tsawwassen leadership chose to commission the well-being
survey in subsequent years, including a variable representing satisfaction with culture may be a valuable resource for further well-being analyses.

2.6. Conclusion

In the Tsawwassen traditional language, Hun’qum’i’num, the word Tsawwassen translates to “Land facing the sea”, highlighting the intrinsic link between the community Members and their surroundings. Even in name, the land defines the community and is paramount to identity. As one Member states,

“I feel that we’re a land-based community and we identify with our land and our medicinal plants and our fish and the crabs and all that stuff, so I think that’s [the environment] really important (TFN 519, female, living on Lands).

Using qualitative and quantitative data collected through a survey of well-being jointly designed by UBC researchers and the Tsawwassen First Nation and implemented over the summer and fall of 2012, this paper examines well-being in the Tsawwassen community using the Personal Well-being Index. Results of regression analysis show that the PWI as defined by the International Wellbeing Working Group is a valid measure of well-being in the Tsawwassen community. Indicators of well-being such as income, housing, and employment used in frameworks such as the HDI and CWB, are not found to serve as direct measures of subjective well-being itself or influence how it is experienced in the Tsawwassen community when well-being is defined through the PWI model.

However, qualitative analysis suggests that these variables are important to several individuals in the Tsawwassen community and may influence one or more of the components of well-being that make up the PWI. While the PWI is found to be a statistically accurate method of measuring well-being quantitatively in the
Tsawwassen community, further research into the statistically significant individual components of well-being is likely necessary to understand what specific policies and programs are needed to increase well-being in the Tsawwassen community.

Additionally, the variable found to most statistically significantly account for variation in well-being in the Tsawwassen community is satisfaction with the health of the local environment, explaining 29.3% of variation in well-being when the influence of gender, whether respondents live on Tsawwassen Lands, personal income, high school completion, employment status, and housing quality are controlled. On average, when satisfaction with the health of the local environment is higher, so are levels of overall well-being. As this finding applies to Members who live both on and off Tsawwassen Lands, this paper argues that there is a cultural connection to the environment experienced by Members. This argument is supported by qualitative analysis, which shows Tsawwassen Members strongly connect environment, culture and wellbeing, both consciously and unconsciously. Given that environment is only one facet of culture in the Tsawwassen community, if the Tsawwassen leadership commission the well-being survey in subsequent years, including a satisfaction with culture variable may be a valuable resource for further well-being analyses.

This paper represents a baseline analysis of well-being in the Tsawwassen community. The well-being survey is an important tool for the Tsawwassen Government to track changes in the well-being of their Members as policy, programs, services, and economic development are implemented. Not only are the Tsawwassen Government deeply conscious of improving the well-being of their Members, they are also closely watched by others across BC and around the world.
who are curious as to whether the Tsawwassen community is better off under self-government. This paper gives the Tsawwassen Government a baseline understanding of current levels of well-being in their community, highlights further areas of research to inform direction of policy and programs to positively influence well-being, and suggests an additional variable to include in future iterations of the well-being survey to further inform their quantitative understanding of well-being. While this paper contributes to the well-being literature as a profile of well-being in a Canadian Aboriginal community with a modern treaty, I also hope it also provides a tool for the Tsawwassen Government and their Members as they move forward with self-government.
3. Chapter 3: Trust as a Moderator of Perceptions of the Environment and Development on Tsawwassen Lands

3.1. Introduction

On December 6, 2007, the Tsawwassen First Nation became the second First Nation in BC to sign a modern treaty with the BC Provincial and Canadian Federal governments, and the first to sign through the BC Treaty Commission six-stage negotiation process. Improving the well-being of their Membership is a key goal of the Tsawwassen First Nation Government (the Tsawwassen Government) both before and after the implementation of the Treaty. As Chief Kim Baird stated in her historic speech to the BC Legislature on October 15, 2007, prior to debate and assent of the Treaty legislation:

“The Tsawwassen Treaty, clause by clause, emphasizes self-reliance, personal responsibility and modern education. It allows us to pursue meaningful employment from the resources of our own territory for our own people. Or in other words, a quality of life comparable to other British Columbians.” (Baird 2007)

Yet, as Papllon (2008, 5) notes:

Treaties do not change socio-economic conditions... but over time, and with proactive leadership and collaboration between all parties involved, CLCAs [Comprehensive Land Claim Agreements] can become the instruments whereby Aboriginal peoples establish governance relationships that better reflect their social, economic, and political aspirations.

The Tsawwassen First Nation is in a period of transition. They are four years into self-government and are actively transitioning out of the programs and services formally provided by Aboriginal Affairs and Northern Development Canada (AANDC) to their own fully self-sufficient self-government. In signing the Treaty, the Tsawwassen First Nation is (literally) paving new ground. This includes the creation
of large scale economic development projects on their Treaty Lands, with the focus on building the financial foundation of a revenue stream to fund the programs and services the community requires, as well as providing jobs for Members. To date, the development projects initiated on their Lands include a market housing development called Tsawwassen Shores, an industrial development adjacent to Port Metro Vancouver’s Roberts Bank and Deltaport, and a retail commercial development project called Tsawwassen Mills. While these projects are being built on Tsawwassen Lands, the housing developments will be sold on the open market and not likely owned or occupied by Tsawwassen Members. Similarly, the commercial and industrial developments will be leased on the open market. This constitutes a considerable break with past usage of their Lands, both pre and post Treaty, but an option taken by a small number of other local non-treaty First Nations. Before the projects went ahead, they were voted on and approved by the Membership. For example, the vote on the development of Tsawwassen Mills was approved by 97% of those voting (Ryan 2012).

At the same time, while the majority of those voting within the community approved the implementation of this particular infrastructure development project, satisfaction with the health of the local environment plays an important and acknowledged role in the overall well-being of the community with environmental factors strongly linked to Tsawwassen culture (See Chapter 2). As environmental commitments and land development activities are often at odds with each other, this paper examines this seemingly contradictory set of beliefs, exploring the hypothesis

11 For example, the Squamish First Nation operate Park Royal, a major retail mall on their Reserve lands in West Vancouver and the Tsleil-Waututh First Nation have several market housing developments on their Reserve lands in North Vancouver.
that trust in government plays an important role in mediating these two perspectives.

Using data collected for the Tsawwassen well-being survey, this paper first examines how Tsawwassen Members view the development projects on their Lands through an analysis of qualitative interview responses. This will focus specifically on how and to what extent the idea of “trust in government” plays a role in these perceptions of infrastructure development. Then, the concept of trust itself will be examined, using quantitative survey data, this time specifically considering how trust in government interacts with other forms of trust, including what is referred to as generalized and institutional trust. Finally, the role of trust in well-being will be examined by adding the trust factors to the well-being regression models specified in Chapter 2, testing whether trust and satisfaction with the health of the local environment describe variation in overall well-being when controlling for basic demographic and socio-economic factors.

3.1.1.  **Context**

Both the qualitative and quantitative data analyzed in this paper are taken from the Tsawwassen Well-being Study, developed and implemented in partnership with the Tsawwassen First Nation. In 2010, the Tsawwassen First Nation leadership approached Dr. Ralph Matthews, Professor of Sociology at the University of British Columbia, requesting his assistance in developing and administering a survey measuring the well-being of their Members. Dr. Matthews’ team of researchers joined a committee of Tsawwassen government and community representatives (the Tsawwassen survey committee) to collaboratively design the interview schedule and survey. During the survey design process, the team identified as relevant a wide range of existing survey questions and indices of well-being used by other statistical
agencies (including Statistics Canada). In addition, the team developed questions that were of particular relevance to the Tsawwassen. In a series of meetings, the survey committee reviewed and modified questions to meet the project criteria as well as reflect Tsawwassen’s specific understandings of well-being. The final survey included both qualitative and quantitative questions measuring multiple aspects of well-being, including trust, social support, community and individual life satisfaction, land-use, institutional capacity, and personal health.

Survey questions derived from existing surveys and models of well-being included:

- basic demographic and socio-economic characteristics,
- questions about housing cost and quality from the Canadian Census (Statistics Canada 2006),
- trust matrices from the Canadian General Household Survey (Statistics Canada 2004),
- subjective well-being indices from the Personal Wellbeing Index (International Wellbeing Working Group 2006),
- Mental Health Inventory Five Item Questionnaire (Berwick et al. 1991),
- housing overcrowding from the Canadian Census reflecting the Canadian Mortgage and Housing Commission definition of overcrowding (Statistics Canada 2006), and
- employment characteristics from the Canadian Census (Statistics Canada 2006).
Additional scales unique to this study were developed to measure:

- social capital and reciprocity,
- cultural activities,
- traditional food collection and consumption,
- the institutional capacity of the Tsawwassen Government,
- sources of community information,
- social issues in the community where the respondent lived,
- physical health of the respondent,
- why people live where they do,
- experiences in school,
- perceptions of community health, and well-being, environment, governance, and the Treaty, and
- improvements needed in the community.

Prior to the commencement of interviewing, the Tsawwassen Government sent introductory letters to all Tsawwassen Members over the age of 18, \((n = 260)\) explaining the relevance of the study and inviting them to participate in it. The Government also employed a Tsawwassen Member who personally called each eligible Member to arrange a time to be interviewed. The project team attended a Tsawwassen Community Retreat June 2 and 3, 2012 to introduce the study and begin interviewing. Over the summer and fall of 2012, interviewers visited the community regularly to conduct interviews, and travelled to Vancouver Island, the Interior of BC, and Washington State to interview Members living off Tsawwassen Lands. Members unavailable for in-person interviews were offered the opportunity to
complete the survey by phone and were sent, in advance, a scoring guide for the scale based questions. As a result of these efforts, the population of Members sampled for the survey is strongly representative of the demographics of the Tsawwassen community, including age, gender, and where Members live.

Each interview session consisted of open and closed-ended qualitative questions asked by the interviewer, followed by categorical survey questions that the respondents filled in on their own. Interviews, on average, took approximately 90 minutes to complete and were digitally recorded, transcribed and coded. In all, 156 interviews were completed constituting a 60.0 percent response rate.

3.2. Environment and Development

As previously mentioned, the Tsawwassen First Nation has embarked on several major land development projects since the Treaty was signed in April 2009. The Tsawwassen Shores development project (in total a 270 acre masterplan) is located in close proximity to the existing Tsawwassen Village, where approximately 50% of their Members live. While these projects have very high approval ratings, they also have the potential to impact the way-of-life, culture and well-being of Tsawwassen Members, particularly those who live in the Tsawwassen Village.

Chapter 2 reported that satisfaction with the health of the local environment influences self-reported assessments of well-being. While the Tsawwassen survey did not directly address the relationship between environment and well-being, there is considerable evidence of the importance of environmental well-being to the Tsawwassen people and their culture. For example, of 155 valid responses to the question “The natural environment is important to my culture”, 151 (97.4%) agreed or strongly agreed with the question. Similarly, 144 (92.9%) of respondents agreed
or strongly agreed with the question, “The natural environment is important to who I am”. No respondents disagreed with either of these questions. Additionally, 91.4% of respondents agreed or strongly agreed with the statement “Future plans for the development of Tsawwassen Lands should focus on protecting the environment”.

However, consistent with the high rates of approval when the community voted on the development proposals, the well-being survey results also show that 70.7% of respondents (106 of 150 valid responses to the question) agreed that plans for economic development on Tsawwassen Lands will benefit the community. Of the remainder of the respondents, 21.3% (32 of 150) gave mixed responses and only 4.7% (7 of 150) responded with an outright “no” or negative response.

The nearly unanimous view that the local environment is important to the community and the identity of its Members, when coupled with the strong support of those Members for major economic development initiatives, seems somewhat paradoxical, as large-scale development projects and environmental protection are frequently seen as opposing goals. It is the dynamic of this relationship that will be the focus of the remainder of this paper. The underlying hypothesis of this paper is that Member’s trust in their Government’s ability to balance environmental protection with economic development plays a critical role in the acceptance of these often potentially opposing goals. The next section of this paper will explore the factors that influence perceptions of development followed by a discussion of the role of trust in government and its relation to the well-being of Tsawwassen Members.

3.2.1. Perception of Development

As there is little variation in the how Members view the proposed developments, statistical analysis cannot shed light on the factors that influence
these perspectives. However, analysis of the open ended qualitative responses to the questions, “Do you think plans for economic development on Tsawwassen Lands will benefit the community?”, and the follow up question, “Why do you say that?”, can provide some insight into the considerations that Tsawwassen Members took into account in forming their views.

Thematic analysis of the coded responses to these questions suggest that the most common response (50 of 152 responses) is that development will provide the community with a tax base and financial benefit that will fund the government and its Members. For example, one Member states, “With the creation of a tax base, we will finally end up being self supportive and self-reliant” (TFN 111, male, on Lands). Another 33 of the 152 Members responding indicated they believe the development will provide the community with employment opportunities. For example, “I’m hoping it will create jobs that people will like to do” (TFN 307, female, on Lands).

It is somewhat surprising that only nine respondents highlighted the potential interaction between development and the health of the environment given the likelihood that these may conflict. In these responses, there is recognition of the potential for tension between environmental values and the proposed development. Thus, one Member directly explored this tension stating that the community, “… needs the environment”, but went on to state that they also need the money that comes with development. She recognized that there is a conflict in these views, in that, “They are at odds with one another” (TFN 419, female, on Lands). Another Member focuses on balance rather than tension. This Member stated:

We’re trying to create a government that’s able to support [our Members]. So you have to look at both, 50/50. We’re kind of lucky because we’ve been given a chunk of land that we can use for our
financial [well-being] and the lands that we had close to the water, we still have to protect for our own shellfish, salmon and, that type of stuff (TFN 402, male, off Lands).

Another Member directly linked the development to potential loss in environmental quality and associated cultural losses.

We'll benefit from a lot of it [economic development], I think. It's just the environment thing that’s going to pay-- I'm always worried about the environment. Because progress is coming… I think we’re encroaching on some of the wildlife and that around here. And it’s disturbing a lot of it and we're going to lose that. It’s part of our culture (TFN116, male, on Lands).

Given that the community is at a point of transition from Indian Act governance to self-government, the fact that there is recognition that the community needs a strong financial base to fund their government is not surprising. Nor is the idea that employment opportunities are viewed positively given the high levels of unemployment reported in the community. However, the comments around the Government’s handling of the development process (20 of 152 responses) highlight positive and negative influences on the trust relationships between the community and the Government. Six of these were positive statements about the Government’s approach, while ten were mixed, and four were negative. The positive responses highlighted faith in the Government and the plan that they had set out. While the word trust was not used explicitly in these responses, the support expressed suggests the respondents’ trust in the new Government. For example, one Member noted Government transparency in sharing the potential benefits and pitfalls with development.

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12 30.9% of respondents indicated they were unemployed at the time of the well-being survey in 2012. By comparison, the current unemployment rate in B.C. is approximately 6.6% (Statistics Canada 2013)
I think they’ve [the Government] put a lot of time and effort into research, to show the pros and cons. And I think they’ve decided very carefully on a lot of different things, including keeping the Members aware of what’s going on and trying to teach them how to see the good and the bad (TFN 325, female, off Lands).

Another Member echoed this sentiment, focusing on the Government structure and the efforts undertaken to safeguard success.

I think that it’s well thought out how they’ve [the Government] broken the Lands Development into agricultural, industrial and residential. I think they have a good plan. And basically if you’ve got a good plan then hopefully it will work out and be beneficial (TFN 402, male, off Lands).

Many of the mixed and negative responses are directly related to concerns with trust and distrust in the Government for a variety of reasons. One Member expressed concern with the development contracts themselves, and whether they adequately protect Tsawwassen Members both now and in the future:

I don’t understand how the development will benefit the community because, as far as I can tell, the lands are being tied up for a hundred years at a time, which means children and grandchildren have no say in what’s happening. They don’t require developers to do the infrastructure. At one point what I read stated that if a developer couldn’t work out his problems then Tsawwassen would reimburse him for everything he’d done. That was the way I read the paperwork. I don’t feel that the Tsawwassen people are being protected financially. (TFN 134, female, off Lands)

Other Members with mixed opinions express the belief that the development projects have the potential to be beneficial, but only if the Government deals with them appropriately. For example one Member who highlighted this concern, stated:

I hope it [the development] runs properly, and I hope that the Government is taking into account what the Members really want. Not just what a few are saying but putting it [development revenue] into proper facilities, proper funds, proper distributions and do it that way. Because we need it [the development] to run. (TFN 517, female, on Lands).
A small number (n=7) expressed outright distrust of the Government or specifically distrust with the handling of the development process. This view is reflected in this comment:

No. It’s the same thing. Where the overhead at that office is so extensive that it becomes a beast that has to feed itself and not the band Members.” (TFN120, male, on Lands).

These statements provide some limited insights into the existence of at least some concerns about the impacts of the land development in the community. As these quotes suggest, regardless of whether respondents believe the development of Treaty Lands will be beneficial to the community, trust plays a primary role in the foundation of Members perceptions.

Trust is a well researched subject in many areas of social science with specific links to well-being (Helliwell and Putnam 2004; Matthews and Buse 2008; Helliwell 2011; Ward and Meyer 2012). Given the findings reported in Chapter 2 that satisfaction with the health of the environment is important to well-being, and the qualitative data suggesting that both trust and the environment play a role in whether Members believe development will benefit the community, the next section of this paper examines how trust in different individuals, the Tsawwassen Government, and other institutions interact in the Tsawwassen Community. Then, trust variables will be added to the well-being regression modelling specified in Chapter 2 to examine whether trust describes variation in self reported well-being in the Tsawwassen community when satisfaction with the health of the local environment is held constant. If both trust and satisfaction with the health of the local environment are important to well-being, then perhaps it is trust that allows both perspectives to co-exist.
3.3. Trust in Tsawwassen

3.3.1. General and Institutional Trust

Ullmann-Margalit (2004, 77) argues that trusting an institution like government is focused on the “degree of confidence that the institution will continue to pursue its set of goals and to achieve them, regardless of who staffs the institution”. From a risk perspective, by signing the Treaty, the Tsawwassen First Nation is taking a risk or, better put, trusting that life under self-government will be better than life under rule of the (colonial) federal government. Coleman (1990) notes that trust allows for actions that would not be possible otherwise, and highlights the link between trust and organizational norms. Ward and Meyer (2012, 356) implicitly, if not explicitly, link trust and well-being, arguing that “trust is the ‘glue’ that permits functioning between interpersonal and systemic levels of society” and should play a larger role in well-being frameworks. Putnam (1993, 185; 2000) links trust to good citizenship, engagement in civic life, and cooperation, suggesting that trust itself is “key to making democracy work”. Based on these perspectives, understanding how trust works in the Tsawwassen community is important to understanding acceptance of economic development strategies for building and maintaining a strong community under the new governance system when environmental values are also strong in the community.

Dimensions of trust are often broken down into two categories, those that reflect generalized trust and those related to institutional trust. These two factors will be examined in the Tsawwassen case study. Generalized trust, also called social trust and thin trust, is trust in the “generalized other”, but this trust “rests implicitly on some background of shared social networks and expectations of reciprocity”
generalized trust is influenced by cultural learning and experience and liken it to “the sort of thing one learns in school or church” (118). Putnam (2000) considers high levels of generalized trust an indicator of good citizenship, as he has found that people who have generalized trust tend to volunteer more often, contribute to charity, and participate in politics as well as many other activities often associated with civic virtue.

Institutional trust involves trust in particular organizations or organized bodies such as government and political authorities. Ward and Meyer (2012, 351) argue that “an individual’s trust originates in both interpersonal and institutional relationships but also stems from personal experience and a variety of social factors”. Similarly, Putnam (2000, 137) argues that trust in government can be a “cause or consequence of social trust, but it is not the same thing as social trust”. Soroka, Helliwell, and Johnson (2007) found that specific trust is also contextual. Soroka et al. define specific trust similarly to institutional trust, defining it as trust in specific individuals, identified by their occupation or the agency they represent (i.e. store clerk or police officer). When comparing data from large and small communities, Soroka et al. (2007, 114) found that small communities “are generally small enough and isolated enough that individuals are more likely to know their neighbours, police, and those who work in the local stores”, and therefore specific trust is higher.

As the hypothesis of this study is that trust in government allows strong environmental values and positive perception towards development of traditional lands to coexist, the next section of this paper will explore how trust in government
interacts with other forms of trust in the Tsawwassen community. While the trust literature discussed above categorizes trust in government more closely with institutional trust rather than generalized trust, the Tsawwassen community may have a different trust dynamic given the small size of the community and the relative newness of self-government. An alternate perspective, which is not explored in this paper, is that of Alfred (1999, 82) who suggests that trust and respect are one of the contemporary ideas of a strong indigenous nation. Alfred (1999, 82) defines respect and trust as “people care about and cooperate with each other and the government of the community, and they trust in one another’s integrity”.

Whether the Tsawwassen government is trusted more generally or institutionally is also of interest for the last section of this paper focusing on well-being, as Matthews and Buse (2008) found that generalized trust is a statistically significant predictor of well-being in their study of Social Capital in Coastal Aboriginal Communities in BC. Other factors, including institutional trust, age, education, and income were not statistically significant to self-reported well-being in their 2008 study. As such, the next section of analysis will examine generalized and institutional trust in Tsawwassen, specifically investigating whether the components of trust defined in the literature are present in the Tsawwassen case study and in whether trust in the Tsawwassen government is more associated with generalized or institutional trust.

3.3.2. Trust in the Tsawwassen Study

The questions regarding trust in the Tsawwassen survey are similar to the trust questions included in the General Social Survey, a yearly survey undertaken by
Statistics Canada (Statistics Canada 2004). The following suite of trust questions are used in the Tsawwassen study:

*How much do you agree or disagree with the following statements about trust in other people?*

- Most people can be trusted,
- You can’t be too careful dealing with people,
- Most Tsawwassen people can be trusted,
- There are groups among the Tsawwassen people I do not trust,
- I trust the police,
- I trust the elected members of the Tsawwassen Government,
- I trust the schools and teachers in this area,
- Young people in this community can be trusted,
- I trust local hospitals and health workers,
- I trust people who live in the communities surrounding Tsawwassen, and
- I trust Aboriginal Affairs and Northern Development (AANDC formally INAC).

During the data collection period of the survey, Tsawwassen held a scheduled election on September 16, 2012 resulting in a change of government, including Chief. The Independent samples t-test and Mann-Whitney tests examine whether the change in government influenced the way respondents answer the 11 trust questions. Both tests confirmed the null hypothesis for nine of the trust questions: the distribution of responses is the same before and after the election. The fact that
the change in government did not influence how respondents answered trust in government question appears to support Ullmann-Margalit’s (2004, 77) argument that trust in government is associated with trust in the institution itself and less about the people who staff it. However, further analysis completed for this paper suggest that there is a unique trust relationship in the Tsawwassen community that is discussed in detailed in later portions of this paper. The remaining two questions there are groups among the Tsawwassen people that I do not trust and I trust the schools and teachers in this area, however, were answered differently before and after the election. As such, an independent variable, time of interview, is included in all regression analyses to control for the influence of the election on responses.

Cronbach’s Alpha reliability analysis was used to determine whether a list of factors measure the same underlying dimension. After an initial Cronbach’s Alpha analysis, “You can’t be too careful in dealing with people” was removed from the analysis. The Cronbach’s Alpha for the remaining ten items is .778, suggesting these factors all measure the same underlying dimension—trust. However, factor analysis of these indicators suggests two distinct factors that can be linked to the conceptual differences between generalized and institutional trust that have been previously discussed. Table 3-1 below shows the two trust components and component loads. The first component, generalized trust, contains the trust factors

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13 Reverse coded
14 Cronbach’s Alpha score was .772 including “You can’t be too careful dealing with people” and increased to .778 when it was removed.
15 “There are groups among the Tsawwassen people I do not trust” (reverse coded) was removed from the factor analysis as it did not factor well with the other components and the two components were stronger with it removed.
16 Two new scale-variables were created in SPSS by combining the related trust items. Factor weights were not applied. In cases where an item potentially fit into two or more factors, variables were categorized with the factors showing the higher levels of component load. In cases of overlap, component load with one factor appeared stronger than the other.
related to Tsawwassen Members. These are the people with whom Tsawwassen Members would theoretically have shared social networks and expectations of reciprocity, the way Putnam (2000) defines generalized trust. In comparison, the second factor, institutional trust, contains factors related to trust in services providers from outside the community, identified by their occupation or agency they represent, the way by Soroka, Helliwell, and Johnson (2007) define institutional trust. The rotated sum of squares loadings for the two factors suggest that 49.57% of variance is explained by the two factors.

Table 3-1: Factor Analysis - Components of Generalized and Institutional Trust in Tsawwassen

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generalized Trust</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most people can be trusted</td>
<td>0.852</td>
<td></td>
</tr>
<tr>
<td>Most Tsawwassen people can be trusted</td>
<td>0.771</td>
<td></td>
</tr>
<tr>
<td>I trust the elected members of the Tsawwassen Government</td>
<td>0.700</td>
<td>0.326</td>
</tr>
<tr>
<td>Young people in this community can be trusted</td>
<td>0.602</td>
<td></td>
</tr>
<tr>
<td><strong>Institutional Trust</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I trust Aboriginal Affairs and Northern Development (formerly INAC)</td>
<td>0.717</td>
<td></td>
</tr>
<tr>
<td>I trust the people who live in the communities surrounding Tsawwassen</td>
<td>0.674</td>
<td></td>
</tr>
<tr>
<td>I trust the local hospitals and health workers</td>
<td>0.660</td>
<td></td>
</tr>
<tr>
<td>I trust the schools and teachers in this area</td>
<td>0.585</td>
<td></td>
</tr>
<tr>
<td>I trust the police</td>
<td>0.310</td>
<td>0.413</td>
</tr>
</tbody>
</table>

Note: Bold text shows the strongest component load, coefficients below .300 not shown.

Given the small size and closeness of the community, the factor analysis of the trust variables also sheds light into whether trust in the Tsawwassen Government is viewed the same way as traditional institutionalized trust. Trust in the Tsawwassen government appears to fit better in the generalized trust component rather than with institutional trust, as the component loading for trust in government is much stronger with the generalized trust factors than the institutional trust factors.
(see Table 3-1 above). This is different from the way trust in government is generally addressed in the literature. The fact that trust in government factors more strongly with generalized trust than institutional suggests that trust in government among the Tsawwassen Members is a broader consideration of the people who make up that government, rather than an institutional body. That is, there is a very broad trust in the Tsawwassen Government that transcends the level of trust in it as an institution.

3.3.3. Discussion: Components of Trust in Tsawwassen

Putnam (2000, 137) argues that trust in government and other social institutions can be a “cause or consequence of social [generalized] trust, but it is not the same thing as social trust”. Factor analysis using the Tsawwassen First Nation data generally confirms this statement. Yet, factor analysis also shows that the components that make up the standard generalized and institutional trust are different than expected from reading the existing literature on trust, particularly in relation to trust in government. Whereas, the trust literature links trust in government closely with institutional trust (see section 3.3.1), in the Tsawwassen case study, trust in government aligned more closely with generalized trust. This difference may be linked to the size and closeness of the community, as well as the transition to Treaty governance.

The Tsawwassen First Nation is a small, family based community. Slightly over 50% of Members live on Tsawwassen Lands, while another 12% live nearby in the Lower Mainland. There is a strong likelihood that many Members directly know the elected Chief and councillors. Unlike trust in the Federal or Provincial government where it is unlikely that the average voter will personally know their MP
or MLA let alone their Prime Minister or Premier, and thus are voting for the party that best represents their views rather than individuals, in Tsawwassen the names on the ballots are faces within the community. The Chief and Council are elected and trusted as individuals, not necessarily because of the institution or ideas they represent. As one Member astutely notes, the move away from the Indian Act is why the Treaty was signed and it is this closeness to the new government that makes an important difference.

I have an opportunity to be a part of a decision-making at the community level and under The Indian Act there was just no ability whatsoever. I mean other than appealing to the Minister of Indian Affairs directly, which, of course, never happens. But, you know, finally I have an ability to bring my concerns directly to government and see them observed by government and acted upon by government. I may not always agree with the outcome necessarily, but I have recourse whenever that happens and that’s something that I never had before. (TFN102, male, off Lands)

This closeness with the government suggests a relationship that is more similar to the generalized other rather than the more symbolic institutional structure.

Another possible explanation of why trust in government is more closely associated with generalized, rather than institutional, trust may stem from how respondents view the Government, either as a part of the old Indian Act system or as a community based, Treaty government. At the time of the survey, self-government had only been in place for three years. As a major overhaul of a governance system like the transition to treaty government cannot effectively happen overnight — the Tsawwassen have an implementation plan with timelines ranging from the effective date of the Treaty to 50 years following the effective date— three years may not be long enough for some to change the way they view the government. If this study is repeated longitudinally in Tsawwassen, tracking whether trust in government
continues to be viewed more closely to generalized or institutionalized trust will be informative.

Finally, Alfred (1999, 82) suggests that trust and respect are one of the contemporary ideas of a strong indigenous nation stating: “people care about and cooperate with each other and the government of the community, and they trust in one another’s integrity”. In many ways, the Tsawwassen First Nation embodies many of the eight characteristics Alfred (1999) identifies as the contemporary idea of a strong indigenous nation. Alfred also argues that “the indigenous tradition is profoundly egalitarian; it does not put any substantial distance between leaders and other people” (1999, 27). This perspective also provides insight into why the Tsawwassen Government is trusted more generally than institutionally, especially as their traditional governance systems would have been different from the governance structure currently in place. While these are areas of scholarship not further examined in this thesis, they are perspectives in which further exploration may provide additional indigenous insights into the trust dynamics in the Tsawwassen community.

Matthews and Buse (2008) examine the components that make up generalized and institutional trust in Coastal Aboriginal communities in BC. In these communities, the components that make up institutional trust include trust in politicians, community leaders and business leaders. The generalized trust component utilized in Matthews and Buse (2008) in their study included the factors: “most people in this community can be trusted”, “most people can be trusted”, “most people in this community are not likely to take advantage of you if they get the chance”, and “young people in this community can be trusted”. In comparison, in the
Tsawwassen study, the generalized trust factor was fairly similar, with the exception of trust in government, while the institutional trust relationship is about experience with the institutional service providers outside of the community and importantly does not include the Tsawwassen Government. This difference is likely linked to the specific experiences of the transition the Tsawwassen community is undergoing as a Treaty Nation in the early stages of self-governance. While day-to-day governance is under the authority of the Tsawwassen Government, many programs and services continue to be provided by the same outside organizations as before the Treaty.

As previously noted, Matthews and Buse (2008) also found that generalized trust positively influenced self reported well-being in the Aboriginal communities in their study, while institutional trust did not statistically significantly influence well-being. Given that the trust components in Tsawwassen contain different trust factors from those found in Matthews and Buse (2008) case study and the trust literature generally, the next section of this paper explores whether the two trust factors described in Table 3-1 describe variation in well-being in Tsawwassen, when satisfaction with the health of the local environmental is held constant. This regression analysis brings together the qualitative finding of the first sections, that perception of development is influenced by trust in government and the unique trust relationships in the Tsawwassen community, with the well-being analysis from Chapter 2 to test whether both trust in government and satisfaction with the health of the local environment describe variation in well-being. If both positively influence well-being, then perhaps it is this trust that allows both perspectives to co-exist.
3.4. Trust and Well-being in Tsawwassen

The link between trust and well-being is established in the literature related to trust and social capital. Ward and Meyer (2012) specially link trust and well-being, arguing that trust is central to social quality [well-being] and therefore should have a larger role in empirical research on the subject. Helliwell and Wang (2011) also link trust to subjective well-being, explicitly testing the relationship. Through their analysis of social trust using data collected in the Gallup World Poll and the Canadian General Social Survey 17 regarding prospects of a lost wallet being returned by strangers, Helliwell and Wang establish that the link between trust and well-being runs from trust to well-being, making trust the independent variable and well-being the dependent variable in the relationship. Education is found to be an important intervening variable in the trust and well-being analysis.

Few studies have looked at generalized and institutional trust relations in First Nations communities, particularly in relation to well-being. As previously discussed, Matthews and Buse (2008) found that generalized trust is a significant predictor of general well-being in a study of social capital in four coastal First Nations in BC. Intuitional trust, age, education, and income were not significant to any of the three types of well-being. However, the trust components in Tsawwassen are unique, with trust in government viewed generally rather than institutionally.

Given the results of Chapter 2 that demonstrate that satisfaction with the health of the local environment is a key predictor of over-all well-being, and the findings of this paper suggesting that perception of development is influenced by trust in government and the unique trust relationships in the Tsawwassen community, the regression models in this chapter test whether generalized and
institutional trust along with satisfaction with the health of the local environment describe variation in self-reported well-being.

### 3.4.1. Well-being in Tsawwassen

Three nested models are specified below testing the relationship between trust, environment, and well-being when a series of control variables are held constant. In all three models, the dependent variable for the well-being analysis is a scale variable made up of the eight components of the Personal Well-being Index (PWI). In Chapter 2, I tested the validity of the PWI scale in the Tsawwassen Community, finding that it accurately reflects well-being in this case study. The PWI was developed by the International Well-being Working Group (2006) and is made up of the following eight components:

1. your standard of living?
2. your health?
3. what you are achieving in life?
4. your personal relationships?
5. how safe you feel?
6. feeling part of your community?
7. your future security? and,
8. your spirituality or religion?

Cronbach’s Alpha analysis found that the score for the PWI 8-scale questions in the Tsawwassen survey is .779, which is centred within the normal range (.70 -.85) predicted by the International Well-being Working Group (2006). This suggests that the PWI scale is an appropriate measure of well-being in the Tsawwassen community. The calculated percentage Scale Maximum (mathematical formula to
convert PWI scores into standardized, comparable terms) for the Tsawwassen Case study was 68.18%, which is below the expected mean score for Western Nations (between 70-80%) (Lau, Cummins, and McPherson 2005), but higher than the mean reported in Asian case studies\(^\text{17}\). Regression analysis of the eight components with the dependent variable, “Thinking about your own life and personal circumstances, how satisfied are you with your life as a whole?”\(^\text{18}\), found that 56.8% of the variation in personal well-being among participants in the Tsawwassen study is explained by the 8 PWI variables, which is a highly statistically significant finding (p<0.001).

Additionally, I tested whether including variables representing satisfaction with education, housing, and job or employment status improved the PWI model for the Tsawwassen community\(^\text{19}\). When these three additional subjective well-being questions were added to the standard PWI questions, the Cronbach’s Alpha score (see section 2.4.1.2 in Chapter 2) for the Tsawwassen sample increased to .833 with all three items improving the index. However, when the three additional independent variables [education, housing and job status] were added to the PWI regression model (dependent variable, “Thinking about your own life and personal circumstances, how satisfied are you with your life as a whole?”), only an additional 0.8% of variance in well-being is explained. None of the additional variables made a statistically significant improvement to the PWI model.

\(^\text{17}\) In Macao, Rato (2012) found a mean score of 64.4 with a range of 63-66.7, while in Hong Kong, Lau et al. (2005) reports a mean score of 65.9, and in Zhuhai City China, the mean score was 64.4 (Zhenghui and Davey 2009). Similarly, in Thailand, Yiengprugsawan et al. (2010) found a mean PWI score of 70.0.

\(^\text{18}\) This question is not part of the PWI scale as the eight life satisfaction domains are considered to be “theoretically embedded” in the satisfaction with your life as a whole question (International Wellbeing Working Group 2006). When used as the dependent variable in regression analysis with the eight PWI variables as independent variables, the validity of the domains as components of well-being can be tested. Additionally, this analysis can be used to test whether unique variables following the same structure (Likert scale question phrased as Please tell me how satisfied you are with…) explain other aspects of well-being not captured in the standard eight PWI domains.

\(^\text{19}\) Components identified by the Tsawwassen survey committee as potentially important to well-being.
Chapter 2 thus concluded that the eight-domain PWI scale as defined by the International Well-Being Group is a valid indicator of well-being in the Tsawwassen community. Given this finding, I created a scale combining the eight domains of the PWI to act as the dependent variable representing well-being in further analyses on the relationship between satisfaction with the health of the local environment, trust and well-being in the Tsawwassen community. The same scale variable will be used as the dependent variable for the regression models included in this study.

3.4.2. Models

3.4.2.1. Model 1: Control Variables

The first model specified for this analysis is Model 1, which measures the influence of the following independent variables on self-reported overall well-being:

- gender
- personal income
- high school completion
- employment or self-employment
- quality of housing
- whether Members live on or off Tsawwassen Lands
- whether Members were interviewed before or after the September 16, 2012 election.

These independent variables are chosen as control variables because they represent aspects of life that could result in very different life experiences and influences on well-being. Gender and whether Members live on or off Tsawwassen Lands are included because they represent two ways in which the Tsawwassen
community is split nearly in half. Demographically, half of the population is male and half is female, while only half of Tsawwassen Members 18 years or older live on Tsawwassen Treaty Lands. High school completion\textsuperscript{20}, employment or self-employment\textsuperscript{21}, and housing quality\textsuperscript{22} are included as control variables because during the survey design process, the Tsawwassen survey committee identified these variables as potentially important to well-being. Personal income\textsuperscript{23} is also included in this analysis because economic indicators are often key components of well-being models, including, for example, the HDI. Finally, time of interview is included as a control variable to hold constant the influence of the election on responses.

By including these variables as controls, the influences of these factors are held constant so only the variation associated with the variables of interest is measured. Model 1 tests the variance described by the control variables on well-being on their own. Table 3- 2 shows the relationships tested in Model 1.

\textsuperscript{20} The education variable is a dummy variable with 1 representing completion of high school or high school equivalence (General Education Development or GED) and 0 representing no high school completion.

\textsuperscript{21} The employment variable is a dummy with 1 representing people who are employed or self-employed and 0 representing those who are not employed.

\textsuperscript{22} The housing variable is a dummy variable with 1 representing no housing repair needs and 0 representing housing in need of minor repair (e.g. missing or loose floor tiles, bricks, or shingles, defective steps, railings, or siding) or major repair (e.g. defective plumbing or electrical wiring).

\textsuperscript{23} The personal income variable is a categorical variable measuring income brackets ranging from $0-9,999 to $150,000 and above.
Figure 3-1: Model 1 – Influence of Gender, Whether Respondents Live on Tsawwassen Lands, Personal Income, High School Completion, Employment Status, Housing Repair, and Time of Interview on Overall Well-being

Table 3-2 at the end of this section shows the results of the regression modelling. The results of Model 1 suggests that while the combined variance of control variables gender, live on Tsawwassen Lands, personal income, high school completion, employment, housing repair needs or time of interview explain 9.4% of variation in well-being, none of the factors statistically significantly influence the dependent variable of well-being.

3.4.2.2. Model 2: Control Variables and Satisfaction with Health of the Local Environment

Model 2 tests whether satisfaction with the health of the local environment explains variance in well-being when the control variables are held constant. The independent variable representing the environment is the scale responses to the question: “Please tell me how satisfied you are with the following things in your
community: The health of the local environment?”. The question is answered on a five-point Likert scale with one being very dissatisfied and five being very satisfied.

Figure 3- 2 below visually shows the relationships tested in Model 2.

**Figure 3- 2: Model 2 – Influence of Satisfaction with the Health of the Local Environment and Control Variables on Overall Well-being**

The output of Model 2 shows satisfaction with the health of the local environment is highly statistically significant (p<0.001) positively influencing well-being when the control variables are held constant. High school completion is mildly statistically significant to this model (p<0.05) suggesting that those who have completed high school or high school equivalency have higher well-being scores that those without a high school certificate.
3.4.2.3. **Model 3: Environment, Trust, and Well-being**

The final regression model, Model 3, tests whether generalized and institutional trust are statistically significant to well-being when satisfaction with the health of the local environment and the control variables are held constant. The independent variables representing trust are scale variables created by combining the factors found to make up generalized and institutional trust in the Tsawwassen community (see section 3.3.2). Figure 3- 3 below shows relationships tested in Model 3. This model tests the hypothesis that both trust and satisfaction with the health of the local environment influences well-being.

**Figure 3- 3: Model 3 – Influence of Generalized and Institutional Trust and Control Variables on Overall Well-being**

The results of Model 3 shows that when generalized and institutional trust are added to the well-being model, satisfaction with the health of the local environment remains highly statistically significant (p<0.001) predictor of overall well-being.
Generalized trust is also a statistically significant (p<0.01) predictor of well-being, while institutional trust is a mildly statistically significant (p<0.05) predictor of overall well-being, when the control variables are held constant. The control variable, completion of high school, is not a statistically significant predictor of well-being when generalized and institutional trust are included in the regression model. While completion of high school was mildly statistically significant in Model 2, the influence of the variable is lost when trust is added to the analysis.

Table 3-2 below shows the results of the three nested regression models testing the influence of satisfaction with the health of the local environment, generalized trust, and institutional trust on well-being in the Tsawwassen community.
Table 3-2: Regression Modelling Results - Well-being, Environment and Trust

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
<th>Model 3</th>
<th></th>
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<tr>
<td></td>
<td>B</td>
<td>S.E.</td>
<td>B</td>
<td>S.E.</td>
<td>B</td>
<td>S.E.</td>
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<td>Dependent Variable:</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Well-being</td>
<td>28.400</td>
<td>1.841</td>
<td>22.180</td>
<td>1.912</td>
<td>15.815</td>
<td>2.428</td>
</tr>
<tr>
<td>Independent Variables:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-1.335</td>
<td>.878</td>
<td>-.719</td>
<td>.783</td>
<td>-.650</td>
<td>.740</td>
</tr>
<tr>
<td>Live on Tsawwassen Lands</td>
<td>.560</td>
<td>.908</td>
<td>-.398</td>
<td>.818</td>
<td>-.350</td>
<td>.774</td>
</tr>
<tr>
<td>Personal Income</td>
<td>.105</td>
<td>.174</td>
<td>.159</td>
<td>.154</td>
<td>.171</td>
<td>.146</td>
</tr>
<tr>
<td>High School Completion</td>
<td>1.479</td>
<td>.888</td>
<td>1.752*</td>
<td>.787</td>
<td>1.092</td>
<td>.761</td>
</tr>
<tr>
<td>Employed or Self-employed</td>
<td>.749</td>
<td>.952</td>
<td>.728</td>
<td>.842</td>
<td>.415</td>
<td>.808</td>
</tr>
<tr>
<td>Housing repairs of all kind needed</td>
<td>-1.470</td>
<td>.833</td>
<td>-.743</td>
<td>.746</td>
<td>-.631</td>
<td>.706</td>
</tr>
<tr>
<td>Time of Interview</td>
<td>.499</td>
<td>.923</td>
<td>.528</td>
<td>.817</td>
<td>.330</td>
<td>.780</td>
</tr>
<tr>
<td>Satisfaction with the Health of the Local Environment</td>
<td>2.077***</td>
<td>.335</td>
<td>1.436***</td>
<td>.351</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generalized Trust</td>
<td>.383**</td>
<td>.129</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institutional Trust</td>
<td>.300*</td>
<td>.148</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>.094</td>
<td>.296</td>
<td>.382</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>1.997</td>
<td>7.051***</td>
<td>8.155***</td>
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</tr>
<tr>
<td>R² Δ</td>
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<td>.202</td>
<td>.086</td>
<td></td>
<td></td>
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<tr>
<td>F Δ</td>
<td>1.997</td>
<td>38.538***</td>
<td>9.145***</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N=143, p<0.05*, p<0.01 **, p<.001***

3.4.3. Discussion and Analysis: Trust and Well-being

It is important to note that while generalized and institutional trust are statistically significant predictors of well-being in this study, satisfaction with the health of the local environment remains the more statistically significant driving factor in the well-being regression analysis. This is important for the Tsawwassen government, as they plan to develop programs and services to continue to address the symbolic importance of environmental issues. Programs and services are already in place to address many of the control variables — including education and employment— but the less tangible aspects of environmental well-being have been
shown to be of critical importance. While this statistical analysis does not directly address the question of why perceptions supporting the importance of the environment to the community and support for development of Treaty Lands are able to co-exist, particularly as the importance of the health of the local environment to well-being is reinforced, the strong statistically significant relationship between generalized trust and well-being provide some insight.

3.4.3.1. Generalized Trust and Well-being

As discussed in Section 3.2.1, regardless of whether respondents believe the development of Treaty Lands will be beneficial to the community, trust plays a primary role in the foundation of Members perceptions. Analysis in section 3.3.3 shows that the generalized trust factor contains trust in Government and trust in the Tsawwassen government is viewed more similarly to trust in Members than the institution of government. If the Tsawwassen Government is trusted more similarly to individual Members rather than as a formal institution, it can be argued that the leadership may represent similar values to those widely held in the community, including a strong connection to the environment. Therefore, trust that the government will make decisions that reflect the same environmental values as those held by the community may allow the two perspectives to coexist. If Members trust and expect the Government to do the right thing, then inherent in that would be a reflection of community values. What is clear from the qualitative and quantitative analysis completed for in the thesis is that trust in government is similar to trust in the Tsawwassen community as a whole, and environmental values are overwhelmingly shared throughout the community. Given that generalized trust is based in cultural learning (Soroka et al., 2007) it is not a stretch to assume that the
government, made up of Tsawwassen Members, many of whom were interviewed as part of this survey, share the environmental values nearly unanimously expressed. Additionally, not only does trust in government appear to mediate the environmental and development perceptions in the community, it also, as a component of generalized trust that statistically significantly describes variation in well-being in a positive manner.

The Generalized trust component also includes variable reflecting trust among Members. From the perspective of community connectedness and community building, the relationship between generalized trust and well-being is well established in the social capital literature. While the Tsawwassen people have been a community since time immemorial, the Treaty represents renewal in the Tsawwassen community and a chance to rebuild after years living under the Indian Act. Unity among the Nation was commonly brought forward as one of the most important improvements Members wished to see in the Tsawwassen community (23 of 149 responses, the highest frequency of the response categories), particularly in light of the development projects on Tsawwassen Lands. As previously noted, many Members believe the development on Tsawwassen Lands will be positive to the community and bring positive economic change. However, other Members note the creation of “us and them” dynamic in the community between landowners have been and will benefit from sale and lease of their land, versus those who are renting and will not receive the same financial benefits. This Member, a landowner who stands to gain from the proposed economic development, highlights this issue as they identify unity as the most important area of improvement for the community, stating:
I would like us to work on our unity. There are haves and the have-nots as it relates to land. There’s, like, five families that own land and the others don’t. And so I can feel a greater division. And so I just think if we could make sure with the economic opportunities, there’s some of our new Treaty Lands that are-- we’re all going to be shareholders in. But yet there’s a big development that’s going on where certain individuals are going to profit, and I’m one of them. And I’m feeling kind-- I’m excited, but guilty also. I can already sense the feeling of people looking at me differently. And I used to be part of the community, and I can feel the division starting. And so I think-- I don’t know if the legislative-- assembly people are as aware of how bad it’s going to become, and I can feel it now. So I think that would be one of the main focuses, ‘cause it’s only going to get worse unless it’s addressed. (TFN407, female, on Lands).

While this comment does not directly address trust, it does highlight important community relationships that this Member views as essential for the community moving forward. Community relationships and generalized trust tend to go hand in hand. According to Putnam, (2000, 137) “people who trust others are all-round good citizens, and those more engaged in community life are both more trusting and more trustworthy”. Overall, generalized trust is important to well-being, especially as the Tsawwassen community continues to establish their self government. As Putnam (2000, 135) notes, “a society that relies on generalized reciprocity is more efficient than a distrustful society, for the same reason that money is more efficient than barter. Honesty and trust lubricates the inevitable frictions of social life”.

3.5. Conclusion: Development, Trust and Well-being

Using qualitative and quantitative data collected through a survey of well-being jointly designed by UBC researchers and the Tsawwassen First Nation and implemented over the summer and fall of 2012, this paper has examined the relationship between perceptions of the development of Tsawwassen Treaty Lands, trust, and well-being. Following our finding that satisfaction with the health of the
local environment influences well-being and that environment itself is closely associated with culture, this paper first examined perceptions of development in the Tsawwassen Community. As positive perception of the development for Tsawwassen Lands for economic purposes is also very high within the community, this study also examined the role of trust as a mediating force allowing the two paradoxical perceptions to coexist.

Thematic analysis of qualitative comments made about the development of Tsawwassen Lands found that trust in how the government is handling the development process is important in shaping perspectives of development, regardless of whether Members were in favour or opposed to the development plans. Quantitative factor analysis of components of trust queried in the Tsawwassen survey, show that trust in government is viewed more similarly to the components that make up generalized trust, than to those that constitute institutional trust. As trust in government generally fall under institutional trust in the established trust literature, I argue that in the Tsawwassen community, the government and the individuals that have leadership roles are viewed as part of the community rather than as the governing ‘institution’. This is likely because of the close nature of the relatively small community in contrast to larger communities where the people in leadership roles represent a position or a view rather than a person who one personally knows. When generalized and institutional trust are added to the well-being regression model specified in Chapter 2 testing the influence of satisfaction with the health of the local environment on well-being, both generalized and institutional trust were found to influence well-being.
The findings of all three sections are taken together to inform the underlying conclusion of this paper: trust plays an important role in both the perception of development on Tsawwassen Lands and on individual subjective well-being; and, in doing so, bridges the gap between the two seemingly paradoxical perspectives, namely the high approval for development and the acknowledged importance of a healthy environment to community well-being.

This paper specifically contributes to the literature on trust and well-being in an Aboriginal community, finding that both general and institutional trust influence well-being in the Tsawwassen community, a different finding from other studies testing the role of trust in Aboriginal communities in BC. However, this difference is more about the difference between how generalized and institutional trust are conceptualized in the Tsawwassen community than the face value conclusion that both generalized and institutional trust influence well-being in the Tsawwassen community.

As these findings are grounded in the context of the early stages of transition to self-government, the opportunity to replicate this survey and analysis offers a chance to track whether and how trust dynamics change with the implementation of self-government and whether these changes influence well-being. Specifically, following up on whether the elected members of the Tsawwassen Government continue to be trusted generally rather than institutionally as more and more programs and services are provided directly from the Tsawwassen Government is a fascinating opportunity for further study. This could allow for further analysis into the perspective identified by Alfred (1999) that characterizing trust in government as a component of generalized rather than institutional trust may be a characteristic of a
modern indigenous nation, a theory not explored in this paper. Either way, a longitudinal study of the trust relationships in the Tsawwassen community is an noteworthy opportunity for further research.
4. Chapter 4: Summary of Conclusions

Overall, this research confirms my two research hypotheses: environment is important to the well-being of Tsawwassen Members and trust in the Tsawwassen government allows for the acceptability of development of Tsawwassen Treaty Lands for commercial purposes despite the fact that natural environment is acknowledged as key to the Tsawwassen culture and well-being. I see the contributions of this paper from two perspectives: contributions to academia and contributions to the Tsawwassen First Nation.

From an academic perspective, Chapter 2 represents a PWI study in an Aboriginal Treaty Nation in Canada. It shows that the standard PWI variables measure and reflect well-being in the Tsawwassen community as it meets the statistical expectations of set out by the International Well-being Working Group for the PWI. This analysis is unique in that it also finds satisfaction with the health of the local environment is highly significant statistical predictor of well-being, a finding that is ground-truthed in the qualitative interview findings. I argue that the importance of the environment to well-being is culturally based as the strong connection between satisfaction with the environment is consistent among Members who live both on and off Tsawwassen lands as environmental values are often articulated in a manner that strongly connects environment, culture and wellbeing, both consciously and unconsciously. Interestingly, satisfaction with culture is not a component of the PWI and may represent an area for further analysis if the Tsawwassen survey is undertaken again in subsequent years.
Chapter Three contributes to the trust and well-being literature as it finds that both generalized and institutional trust positively predicts self-reported well-being, which is different from much of the existing trust literature than suggests that only generalized trust influences well-being. However, more importantly, this study shows that trust dynamics are different in the Tsawwassen community as trust in government is viewed more similarly to generalized than institutional trust. Simply put, the Tsawwassen Members trust the elected leadership in their community same way they trust other Members of their community, rather than viewing the leadership as a symbolic unit of governance. This finding sheds light on the key question of Chapter 3, what allows the two strongly held, seemingly contradictory set of beliefs that the natural environment is important to well-being and support for commercial land development on Tsawwassen Lands, to coexist? This Chapter argues that trust in government plays an important role in mediating these two perspectives. What is clear from the qualitative and quantitative analysis completed in this Chapter is that trust in government is similar to trust in the Tsawwassen community as a whole, and environmental values are overwhelmingly shared throughout the community. If Members trust the Government to do the right thing, then inherent in that would be a reflection of community values, including environmental values.

The difference between components that make up institutional and general trust the Tsawwassen community identified in this survey also highlights an interesting opportunity for future longitudinal research. As the Treaty and self-governance are relatively new in the Tsawwassen Community, at the time of the survey only in place for three years, tracking how and if trust in government changes from general to institutional trust as the Tsawwassen Government becomes the
provider of more and more programs and services will be fascinating. Following this research question may also shed light into whether the government is trusted generally rather than institutionally as a product of the current context of the community as they transition from Colonial to Self-governance or whether it is a characteristic of a modern indigenous nation, the perspective identified by Alfred (1999) but not explored in this paper. While it is too soon to carry out this analysis with the data from only this survey, it is a fascinating question for future research.

To the Tsawwassen First Nation, I hope this study represents a baseline understanding of well-being in their community. As one of the key goals of this survey was to produce a replicable tool to measure well-being over time, Chapter 2 shows that the PWI framework included in the survey is an appropriate measure of well-being in their community, in that it measures well-being in the manner intended by the PWI. If this survey is repeated over time, the PWI can be a useful tool to track changes in well-being. As the PWI is an aggregated index, it is less useful as a tool to identify areas where programs and services can be implemented to increase well-being. An area for further research includes examining the statistically significant components of well-being to test for how some of the more tangible life factors such as education, employment, and housing are influential. In theory, if the programs and services are able to positively influence the statistically significant individual components that make up well-being, overall well-being will in turn increase.

In many ways, the overall findings of both Chapters 2 and 3 confirm what is already known in the Tsawwassen community: that the environment is important to well-being and trust in the Tsawwassen leadership is key to the acceptability of the development of Tsawwassen Treaty Lands. I hope that articulating these findings
through this thesis can act as a small piece of validation of these beliefs, confirming what they know to be true, as the community continues to move forward with developing and maintaining their governance systems, programs, and services.
Works Cited


Chan, Kai M A, Terre Satterfield, and Joshua Goldstein. 2012. Rethinking ecosystem services to better address and navigate cultural values. Ecological Economics 74: 8–18.


Accessed October 16.


