Life satisfaction among Aboriginals in the Canadian Prairies: Evidence from the Equality, Security and Community survey

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Abstract

Subjective measures of overall quality of life are increasingly analyzed as indicators of human well-being and social progress. Yet in Canada there are very few such data from Aboriginal respondents. We report on two surveys which do solicit life satisfaction assessments from Aboriginal respondents, and compare inferences from such data to those for the general Canadian population. With some interesting exceptions, we find generally comparable effects of objective life circumstances, and use these to explain some of the advantages and disadvantages affecting each sample. We propose that policy interest in life satisfaction as a gauge for improving lives is appropriate in the case of Aboriginal groups in Canada, just as for other populations in Canada and around the world.

KEYWORDS: subjective well-being, happiness, life satisfaction, income, Aboriginal, Canada
JEL CODES: I3,I31,D6,O1

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1 Introduction

In 2010 the Canadian government endorsed the UN Declaration on the Rights of Indigenous People (UNDRIP), "reaffirm[ing] its commitment... to improve the *well-being* of Aboriginal Canadians" (Aboriginal Affairs and Northern Development Canada, 2010, the italic emphasis here and below is the authors'). Formally adopted by the UN General Assembly in 2011, the UNDRIP has the potential to have significant and far-reaching implications for indigenous communities globally. The UNDRIP recognizes that the rights enumerated by the 1948 UN Declaration of Human Rights (UNDHR) extend to indigenous communities and further entrenches rights that "...constitute the minimum standards for the survival, dignity and *well-being* of the indigenous peoples of the world" (UN General Assembly, 2007, p.11). Among UNDHR rights is "...the right to a standard of living adequate for the health and *well-being* of himself [the global citizen] and of his family..." (UN General Assembly, 1948, Article 45). On top of its international commitments,[1] Aboriginal Affairs and Northern Development Canada (AANDC), a federal government department of Canada, has an explicit mandate to "... [support] Aboriginal people (First Nations, Inuit and Métis) and Northerners in their efforts to... improve social *well-being* and economic prosperity..." (Aboriginal Affairs and Northern Development Canada, 2015). The UNDHR, UNDRIP and official Canadian public policy all hold *well-being* as a standard for achievement. It is therefore of obvious and primary importance to understand *well-being*, its determinants, and the aspects of well-being that transcend cultural, ethnic and geographic dimensions — and those that do not.

On the other hand, among these bodies, or more broadly among thinkers on the subject of human welfare, there can be little expectation of a firm consensus on a single definition or even defining features for an empirically accountable meaning of well-being. Ideally, Aboriginal communities like all others should be able to define their own over-arching concepts of well-being. Indeed, if these concepts are to be meaningful and actionable, societies must define corresponding measurements for them as well.

In this paper, we embrace a prominent development among economists, psychologists, and policy makers, which is to use a single, well-specified measure of well-being — individuals' self-reported overall satisfaction with life (SWL) — and bring the available evidence to bear on the question of the well-being of Aboriginals in Canada. This measure is narrow in its specification because it consists of the data generated from responses to a single survey question, yet it is broad in scope because it encompasses anything and everything that is salient to whoever is answering the question. In fact, assessing human well-being or social objectives through SWL is, in principle, the most accommodating method of all for letting societies self-define their criteria for progress or what has been called "thriving," because it leaves that task up to each individual to carry out, independently, when responding to the question. See Diener, Inglehart, and Tay

[1] It should be noted that Canada subsequently failed to ratify the 2010 declaration in 2014.

(2013) for more on the validity of life satisfaction as a measure of the quality of respondents' lives.

The *Context* section further introduces the SWL approach and places our study in the context of others. *Data and Methods* provides a detailed overview of the data used in this analysis and describes its limitations. The *Model* section motivates and explains our model, while *Estimation Results* presents our estimates of general SWL trends among the available Aboriginal data. We compare these to trends within the general Canadian population and in *Difference Accounting* use them to explain differences between groups. Finally, we conclude with suggestions for future research.

2 Scope and context

The canonical life satisfaction question, as stated in the surveys we use, is the following:

> *Now a question about life satisfaction. On a scale of 1–10 where ONE means dissatisfied and TEN means satisfied, all things considered how satisfied are you with your life as a whole these days?*

Responses to this single question are obtained from large surveys and, when aggregated, constitute a subjective but quantitative measure of people's cognitive evaluations of their lives. Unlike measures of "psychological affect", mood, or happiness, the response to cognitive life evaluation questions captures not only an individual's assessment of these somewhat involuntary emotional states, but also any and all more cognitive experiences, judgments, and aspirations that an individual may deem relevant to the superlatively broad question.

Life satisfaction as an overarching measure of welfare

Significant high-level interest from policy makers has arisen in recent years around the use of an over-arching measure of subjective well-being, in particular quantitatively reported satisfaction with life, to complement existing metrics of economic welfare and social progress. Evidence of this trend includes Prime Minister Cameron's initiative in the U.K. (Cameron, 2010; Office for National Statistics, 2011); Stiglitz, Sen, and Fitoussi's report commissioned by President Sarkozy of France (Stiglitz, Sen, and Fitoussi, 2009); the OECD's Better Life initiative OECD Better Life Initiative (2014); the U.N.'s World Happiness Reports (Helliwell, Layard, and Sachs, 2012, 2013, 2015); U.S. Federal Reserve chair Bernanke's speech on well-being (Bernanke, 2010), and a growing number of more local initiatives in which subjective well-being is measured and targeted at the civic level.

In line with these developments is a large and rapidly growing academic literature on the measurement and determinants of subjective well-being of individuals and of populations at the community, city, and national levels (see, for example, overviews by Frey and Stutzer, 2002; Dolan, Peasgood, and White,

2008; Helliwell and Barrington-Leigh, 2010). In economics, attention on this topic began in the 1970s with Dick Easterlin questioning whether economic growth led to increased happiness and with the Leyden school in the Netherlands investigating the relationship between subjective assessments and income (Van Praag, 1971).

A number of the grounds for natural skepticism of the interpretation of such data have, after numerous studies as well as some philosophical treatments, been relatively well addressed. Above all, the now-vast empirical experience with these data is a basis for considerable confidence that respondents are doing what one would hope they might be doing, and indeed the data show many robust and intuitive relationships between important life circumstances and individuals' SWL reports.

As the availability of data and analysis on life satisfaction has increased, an interpretation in line with Aristotle's original thoughts on comprehensively evaluating a life has become attractive. Moreover, as globally-comparable data have come to light, so have the most important findings of all for interpreting SWL responses. These relate to the universality of how people respond to the question and, by implication, its meaning across cultures and translations. As described by Helliwell et al. (2010), the factors accounting for variation among individuals' responses to cognitive evaluation of life questions are remarkably consistent among countries and world regions. The variation in average response to the question is enormous (with country means ranging from $\sim$3 to $\sim$8) while the statistically-inferred importance of different economic and social variables appears to be similar everywhere.

One interpretation is that this coherence reflects the degree to which psychological well-being appears to be driven and mediated largely by (universal) social factors (e.g., Aknin et al., 2013). This finding that we are highly social creatures in terms of our experienced well-being (as well as our behaviour) stands in some contrast to the more material consumptive focus which commonly emerges from economic analyses. In addition, the large variability of responses and their predictability from measurable and varying conditions addresses another natural concern — that because aspirations should affect satisfaction, those with difficult circumstances may hold lower aspirations and therefore not exhibit lower satisfaction. Judging from data at all geographic scales, this appears not to be the case.

On the other hand, a great deal of effort goes into ensuring that welfare comparisons are made on objective bases, and the support for using SWL would not be nearly so strong if not for the intuitive and consistent (though arguably not dominant) relationship found between SWL responses and traditional economic indicators.

Canadian aboriginals

Clearly, both objective and subjective metrics of well-being are useful. There is a large body of research on the objective well-being of the Canadian Aboriginal community, most of which paints a discouraging picture. The evidence

that the Canadian Aboriginal population suffers from disproportionate levels of discrimination and socioeconomic disadvantage with respect to the rest of the Canadian population is undisputed (Abele, 2004). The risk of avoidable death for First Nations adults is twice that of non-aboriginal adults (Park et al., 2015). A 1999–2003 study by Health Canada (2009) on First Nations and Inuit health shows that among on-reserve Aboriginals the rate of unemployment during that four-year interval was four times that of the overall Canadian population, the median annual income was less than half that of the overall Canadian population, and almost a quarter of First Nations housing units have water supply deemed "inadequate."

Cognitive life evaluations are now measured every year in most countries and, in some like Canada, are a feature of a number of major government surveys. Nevertheless, while there are now hundreds of thousands of Canadian respondents to the SWL question, the samples do not properly represent identified Aboriginals The role of this paper is to begin modestly to fill this important gap, using a small survey conducted on and off reserves in the Prairies. Although the survey was carried out in 2003 and the data are relatively small, the well-being responses have remained unreported as well as unique. Because of the growing importance of the SWL approach, we investigate them here and compare them to some larger surveys which exclude reserves.

Below, we find that aboriginal respondents have tended to report surprisingly high life evaluations. Given the increasing importance of subjective well-being for policy direction and in broad discussions on the nature of social progress, it is important to assess what the data show for aboriginals as an undersampled population within Canada, even if those data are yet slim. In light of this and of the stark objective challenges mentioned above for many aboriginal communities, we remain cautious and skeptical in our interpretation of our own findings.

This study is intended to complement the existing literature on Aboriginal well-being and its various indicators. Below, we refer specifically to Chandler and Lalonde (1998), who look at suicide rates among aboriginal groups in British Columbia; Kirmayer et al. (2000), who examine the determinants of a level index of psychological distress created by Santé Québec among the Cree of James Bay; Whitbeck et al. (2002), who look at depressive symptoms among American Indians in the upper Midwest; and Wingert (2010), who uses the Community Well-Being Index and individual scores on the Psychological Well-being Manifestation Scale as indicators of well-being.

Population scope

Below, we address a number of dimensions on which the samples we use are limited, as compared with any complete representation of "Aboriginal" populations. As Wingert (2010) explains, "Aboriginal is a social construction that encompasses a diverse group of people with vastly different ancestry, histories, colonial experiences, contemporary conditions, and cultures" (pp 141–142). However, as with national-level analyses, a certain amount of aggregation allows us to es-

tablish a basis from which more culturally- and identity-specific analyses can proceed. This paper focuses on the subjective well-being of a small sample of on- and off-reserve First Nations and Métis peoples in the Canadian Prairies.

3 Data and methods

The data used in this analysis are drawn from two components of the Equality, Security and Community survey (ESC) project, and occasionally from the General Social Survey, Cycle 24 (GSS24). The ESC project was a two-part project run by the Institute for Social Research at York University. This analysis is based on Wave 2 of the ESC, which was completed from 2002–2003, and sampled 5,654 Canadians from all ten provinces (hereafter referred to as the "general ESC sample"). Households were chosen via a random digit dialing mechanism, and one adult respondent within each household was randomly selected using the "next-birthday" mechanism (Northrup, 2002). From 2004–2005, an additional subsample of 608 self-identifying Aboriginal respondents from Manitoba, Saskatchewan and Alberta were given an almost identical version of the ESC questionnaire, modified only slightly to be reflective of dynamics specific to the Aboriginal context (hereafter referred to as the "Aboriginal ESC sample") (Harell, Panagos, and Matthews, 2009).[2] According to a document published by the Institute for Social Research at York University (2004), respondents in this subsample were selected via a mechanism similar to that used in the general ESC sample, the distinguishing characteristic of the Aboriginal subsample being that phone numbers eligible for random dialing were limited to census tracts in Alberta, Manitoba and Saskatchewan containing an Aboriginal reserve or a relatively concentrated urban Aboriginal population.

We also make occasional reference to data from the GSS24 (2010). Like the ESC sample, the GSS sample consists of randomly selected Canadian households (n = 15,390). The GSS24 also includes an Aboriginal identification indicator, so an effective Aboriginal subsample can be pulled from the GSS24 data (n = 579). We hereafter refer to these samples as the "general GSS sample" and "Aboriginal GSS sample," respectively.[3] We use these samples for comparative testing of the robustness of trends found in the Aboriginal ESC sample.ESC data from both the general and Aboriginal samples are weighted according to number of adults in the household. GSS24 data are weighted according to

[2] After dropping all observations where the respondent's Aboriginal identity is unclear, the effective sample size is 604. See the section on on *Aboriginal identity* for details.

[3] When we refer to the general GSS sample, we refer to the sample of *all* GSS respondents (n = 15,390). This includes the 579 self-identifying Aboriginal respondents. We do not exclude the Aboriginal GSS subsample from what we refer to as the general GSS sample. Since the general ESC questionnaire does not include an Aboriginal identification indicator, we cannot control for the possibility that the general ESC sample includes self-identifying Aboriginals. Therefore, excluding the Aboriginal subsample from the general GSS sample would add nothing to comparative analysis between the two general samples. We also speculate that since the Aboriginal GSS subsample accounts for less than 4% of GSS respondents, this decision does not have a significant statistical impact on our results.

the "person weight" constructed by Statistics Canada (Social and Aboriginal Statistics Division, 2011).

3.1 Population definitions

It is important to keep in mind that the data used are by no means fully representative of the Aboriginal population of Canada. This section will briefly highlight *some* of the gaps and biases of this data set.

3.1.1 Aboriginal identity

Aboriginal identity is derived from a respondent's answer to the identity screening question

> The study we are conducting today is designed to ask Aboriginal people how they feel about social, economic and political issues affecting their communities so could you please tell me if you are an Aboriginal person, that is, a North American Indian, Métis or Inuit? (Institute for Social Research at York University, n.d.)

In an effort to confine our sample to self-identifying Aboriginals, we drop all four observations where a respondent identifies as "not an Aboriginal person" or "don't know".

Of those who responded to the Aboriginal identity indicator ($n = 302$, or 50%), 55% ($n = 167$) identify as North American Indian and 9.6% ($n = 29$) identified as Métis (the remaining 35% responded "other"). We can assess the representativeness of this spread using data from the 2001 Census Canada, which indicate that 62% of the Aboriginal population identifies as North American Indian, 30% as Métis, and 4.6% as Inuit (Statistics Canada, 2003).[4] We can see that our sample is heavily skewed towards North American Indian respondents, and that both Métis and Inuit peoples are severely underrepresented.

3.1.2 Geographical location

This sample is confined to Manitoba, Saskatchewan, and Alberta. Data from the 2001 census show that these provinces contain only approximately 45% of Canada's total Aboriginal population (Statistics Canada, 2003). This research is thus missing what could be valuable insight into distinct and relevant differences between this sample and the remaining 55% of the Canadian Aboriginal community. The sample is also limited to census tracts identified as having a relatively concentrated Aboriginal population. The analysis therefore also lacks any insight into the effects of being isolated from a larger Aboriginal community on SWL.

[4] 2001 census data are used here in favor of more recent census data because they are the last census data collected before the Aboriginal oversample project began in 2004.

	Urban	Rural	Total
% On-reserve	2 ($n = 12$)	68 ($n = 412$)	70 ($n = 424$)
% Off-reserve	16 ($n = 95$)	14 ($n = 85$)	30 ($n = 180$)
Total	18 ($n = 107$)	82 ($n = 497$)	100 ($n = 604$)

Table 1: Reserve status and urban/rural demographics in Aboriginal sample.

3.1.3 Reserve status and the urban/rural divide

After weighting, the sample population is 70% on-reserve, and 84% living in an on-reserve and/or rural location. However, again using 2001 census data, Siggner (2003) finds that in that year approximately only one out of three self-identifying Aboriginals lived on a reserve, with 51% living on a reserve and/or in a rural area. This heavy bias towards on-reserve and rural respondents provides an extremely valuable snapshot of SWL when these conditions hold, but any results may not be further generalizable.

We often differentiate between the on- and off-reserve subsamples in the Aboriginal ESC sample. It is important to note that the data treat reserve status and urban/rural location as two separate variables. Therefore, on-reserve status should not be taken to be indicative of rural location, and vice versa. Refer to Table 1 for details on the reserve status and urban-versus-rural spread of our data. The urban, on-reserve cell is small because urban reserves are rare in Canada (although they may also be growing in number; see Peters (2007)).

3.1.4 Phone ownership

The random dialing selection method introduces a sample bias against those without telephones. The issue is well-articulated by Carson and Martin (1999): "Random digit dialing could be seen to discriminate against those without a telephone (the lowest socioeconomic groupings), those unwilling to be forthcoming, and groups with fewer telephones per person." It is important to remember that these data may not be representative of the most critical and pervasive socioeconomic divides between on-reserve Aboriginal communities and the general population. In future research, other random sampling methods should be explored.

3.2 Methods

As mentioned in the *Introduction*, we choose to focus our analysis on responses to the SWL question, to the exclusion of other SWB measures (for a comprehensive discussion of SWB measurements, see OECD (2013)). The wording of the question, given earlier, is identical in the two surveys, so differences in question wording of the SWL question are not an issue in comparative analysis. However, the wording and order of other survey questions are not identical. These differences in the question context or antecedents could shift mean responses or even cause a priming bias, in which certain salient aspects of life feature more

prominently in respondents' estimates of their overall satisfaction as a result of being recently mentioned in the survey.

For descriptive purposes, we proceed using OLS regression models with SWL as the dependent variable.

4 Model

This analysis draws from research done by Helliwell et al. (2010) on variables that have a consistent impact on SWB in data simultaneously covering most countries of the world. While there are now numerous studies following this basic method on other national data sets, many with a similar or overlapping set of explanatory variables, we refer in particular to Helliwell et al. (2010) an internationally valid reference model. Drawing from the findings of this study, nine variables strongly predictive of SWL were identified or derived from the ESC responses. We have added three variables to capture labour market status, because unemployment is one of the strongest predictors of life satisfaction in the broad literature, yet is absent in the Gallup World Poll used by Helliwell et al. (2010). Inclusion of these labour market indicators had little effect on the income, or other, coefficients. A weighted OLS model using these variables was then applied to the Aboriginal subsample. A comparative analysis between our model and the international findings of Helliwell et al. (2010) is detailed in the next section.

The base model describing SWL for individual i is a linear combination of the predictive factors, along with an idiosyncratic error ε:

$$\begin{aligned} \text{SWL}_i = \beta_0 &+ \beta_1 \text{female}_i + \beta_2 \text{age}_i + \beta_3 \text{age}_i^2 + \beta_4 \text{married} + \beta_5 \text{divorced}_i \\ &+ \beta_6 \text{health}_i + \beta_7 asinh(\text{HH income})_i + \beta_8 \text{family}_i + \beta_9 \text{friends}_i \\ &+ \beta_{10} \text{student}_i + \beta_{11} \text{working}_i + \beta_{12} \text{unemployed} \\ &+ \beta_{13} (\text{institutional trust})_i + \beta_{14} (\text{household size})_i \\ &+ \beta_{15} \log(\text{number of children})_i + \varepsilon_i \end{aligned} \tag{1}$$

As mentioned above, these data are unique in that they provide a lens into various aspects of on-reserve Aboriginal life in the Canadian Prairies. However, it is a narrow lens, and due to the small sample size, we rarely distinguish between the on- and off-reserve Aboriginal populations in our main analysis. Suggestive but generally statistically insignificant differences do arise between the two populations. For completeness, relevant models that differentiate between the two subsamples are included in Appendix B.

Householdsize is included in all models for weighting purposes. It should be noted that the *household size* variable in the GSS24 is capped at six household members.

Below is a brief summary of our hypotheses based on the relationships of variables to SWB in the study by Helliwell et al. (2010), and a description of

how each variable was constructed from the ESC data. Tables of weighted mean levels of the model variables are included in Appendix A.

Gender Helliwell et al. (2010) find a significant positive coefficient associated with being female. We construct a dummy variable indicating female identification.

Age Age is included in the model in a quadratic form to allow for the ∪-shaped variation of SWL over the life course found in numerous studies (e.g., Helliwell et al., 2010; Blanchflower and Oswald, 2008). Research shows that SWL tends to decline with age until some time in middle age, and then steadily increase into old age. To be consistent with this trend, the *age* coefficient in this model is expected to be negative, while the age^2 coefficient is expected to be positive. For more convenient scaling, we follow Helliwell et al. (2010) and calculate the age^2 variable as $(age/100)^2$.

Marital status Helliwell et al. (2010) find a significant positive correlation between SWB and being married, and a significant negative correlation between SWB and being divorced, separated, or widowed, as compared with being unattached. In the ESC survey, respondents were asked their marital status. A dummy variable *married* is coded "1" if a respondent is married, and "0" otherwise. For model conciseness, we have coded a dummy variable *divorced* as "1" if a respondent identified as "divorced," "separated," or "widowed," and "0" otherwise.

Health Meta-analyses have shown that there is a significant and persistent positive correlation between subjective health measures and SWB (Okun et al., 1984). Helliwell et al. (2010) regress SWB against national average life expectancy, and find a positive correlation. Respondents answered the question "How would you describe your overall state of health these days?" with possible responses: excellent / very good / good / fair / poor. We coded these responses numerically to a five-point 0 to 1 scale, with 0 corresponding to "poor" health and 1 indicating a response of "excellent" health.[5]

[5]Personal assessments of health from respondents in the general ESC sample have been recoded under the assumption that the initial observations were coded in reverse — e.g. a label of "excellent" has been coded "0" for the purposes of analysis, while a label of "poor" has been coded "1." This is due to properties of the health variable in this sample that strongly suggest that the variable was miscoded in the first place. For example, *health* is much more similarly distributed to the health variable in the GSS data set if it is recoded as suggested. Similarly, a highly significant yet negative correlation between the SWL and health variables persisted in the general ESC sample, despite consistent evidence from other data sets used in this study and other literature that health is strongly positively correlated with SWL. If labels are re-interpreted as suggested, the correlation coefficient reflects the highly significant positive relationship consistent with the empirically-validated trend. Our treatment is consistent with other published analyses using the ESC survey (e.g. Helliwell and Putnam, 2004).

Household income Helliwell et al. (2010) find a significant positive coefficient on the log of household income variable in their SWB model. Household income is included in the model after a log-like transformation,[6] in order to reflect research that shows that income yields diminishing marginal utility to economic agents.

The ESC survey asks respondents for an estimate of total household income to the nearest thousand. However, a significant number of respondents chose not to respond to this question. A follow-up question asks respondents which income bracket includes household income. Income brackets are defined in increments of $10,000. For example, the lowest income bracket a respondent can choose is "less than $20,000," the subsequent is "$20,000–$29,999," and the highest is "$100,000 or more."

It is difficult to choose which household income variable to use in modeling. Using the precise income value variable gives more precise information on the relationship between income and other variables. However, a respondent's income bracket can be inferred from her precise income value, while the reverse is not the case. A model using the precise income variable implies the loss of all observations where the respondent chose not to respond to the precise income question. This is potentially problematic not only because of the loss of confidence in a model associated with a smaller sample size, but also because there may be a bias inherent in a sample that doesn't include respondents who don't know or choose not to report their precise household incomes. Because of these advantages, the household income variable used in this analysis is an indicator of a respondent's income bracket.

The household income variable is defined using the midpoint in each $10,000 income bracket.[7] Responses to the precise income value question were recoded to be included in the income bracket sample. To avoid a significant decline in sample size due to a lack of response to the household income variable by many respondents, missing observations have been recoded to the arithmetic mean of asinh(household income). A similar process was followed for the GSS data.

Social support Helliwell et al. (2010) find a significant positive correlation between SWB and reports of "having someone to count on," demonstrating the value people place on a strong social support network. To highlight this, the ESC-based model includes both *friends* and *family* variables. *Family* is included to reflect an intuitive sense of the importance of family to the Canadian population and literature that confirms its especial importance in a Canadian Aboriginal context (Castellano, 2002). Indeed, *family* is shown to be very significant in the general ESC model.

Family is coded by the response to the question "How often do you see family

[6] Rather than using the standard natural log function, we used an inverse hyperbolic sine transform, similar to log() for large values, in order to accomodate 0 income values in the GSS.

[7] The exceptions are the top and bottom categories. Where a respondent reported total household income in the "less than $20,000" category, a value of $18,000 was coded. The "above $100,000" category was coded as $100,000.

members who do not live with you?" It takes a value between 0 and 1, with "1" indicating "every day" and "0" indicating "less often to never." *Friends* is coded by the response to the question "How often do you see close friends — not your husband or wife or partner or family member, but people you feel fairly close to?" and on the same scale as *family.*

Similar variables are not readily available in the GSS data. *Family* and *friends* are thus necessarily excluded from the GSS model, and any results obtained about the role of social networks in SWB assessments is based solely on the ESC data set. In addition, it should be noted that, as in most surveys, the availability of social support measures does not do justice to its multidimensional nature, especially given the empirical importance of social supports for life satisfaction.

Institutional trust Finally, the model looks at institutional trust among the two populations. Helliwell et al. (2010) show that there is a negative correlation between SWB and perceived corruption in business and government at the country level. This study uses the sum of the response to two questions to generate an *institutional trust* variable:

1. How much do you trust the government in Ottawa to do what is right? Do you trust it almost always, most of the time, only some of the time, or almost never?

2. How much do you trust the government in [PROVINCE] to do what is right? Do you trust it almost always, most of the time, only some of the time, or almost never?

Responses to either question range from "almost never" (0) to "almost always" (3).

Similar variables are not readily available in the GSS data.

Number of children Although not examined in Helliwell et al. (2010), the variable *logchild* has been included after preliminary analysis showed that the coefficient contained explanatory power. Plenty of other studies have also included this variable, sometimes with a particular focus on the effect on life satisfaction of having more children (e.g., Myrskylä and Margolis, 2014). In the ESC samples, a variable *number of children* is coded as a participant's response to the question

> How many children do you have, including any no longer living with you?

A natural logarithmic transformation is applied to the variable to reflect a theoretical assumption that children exhibit "diminishing marginal returns," an assumption that is encouraged by more significant results when *logchild* is used in place of the untransformed *number of children* variable. As with the *household income* variable, missing observations have been recoded to the arithmetic mean

of *logchild* to avoid a significant decline in sample size. The GSS variable conveying number of children takes values only until 4, with 4 corresponding to "4 or more children." Because of this, we do not apply the logarithmic transformation to the *number of children* variable when working with the GSS data.

5 Estimation results

One might expect that lower objective well-being indicators (discussed in brief in the *Introduction*) are reflected in lower SWL levels amongst Aboriginals. Table A1 in Appendix A shows that the mean self-reported SWL scores in each sample are strikingly similar, especially between the two subsamples of each data set. In other words, the mean SWL score in the Aboriginal ESC sample is closest to the mean score in the general ESC sample, and the same is true with respect to the two GSS subsamples.[8] Figure 1 illustrates the distribution of SWL responses among the four subsamples. In each case, there are familiar modal points at 1, 5, and 10, in addition to the value of 8, which is most common in Canada. We can see that the distributions of responses from the general ESC, general GSS and Aboriginal GSS samples are quite similar. However, the distribution of responses from the Aboriginal ESC sample has an extra enhancement of response "5" and above all an enhancement at the top value (10). Except for this mode, this gives a flatter distribution to the Aboriginal ESC responses, even though the means are similar.

Are similar SWL means indicative of similar socioeconomic circumstances between the general and Aboriginal ESC samples? Table A5 shows that this is not the case. It is apparent that respondents in the Aboriginal samples tend to have lower incomes than respondents in the general samples.[9] Similarly, the unemployment rate in the general sample, shown in Table A6, is 5.9%, while it is 19% in the Aboriginal sample — almost four times higher. Also remarkably, the high school completion rate of the general ESC sample is 84%, while it is only 50% in the Aboriginal ESC sample.

Here attention should also be brought to the differences — or lack thereof — between the general and Aboriginal GSS24 samples. Unlike with the ESC samples, differences between the two populations, in terms of income, employment, and education, are much smaller (again refer to Tables A5 and A6). In fact, mean weighted household incomes and rates of employment are essentially identical between the two populations. High school completion rates in the two populations do differ, albeit by much less than in the two ESC samples. These similarities should be stressed. They suggest that the Aboriginal population sampled by the GSS is much more similar to the general Canadian population

[8] This is consistent with some degree of priming bias, mentioned in the *Methods* section.

[9] Although indicative of a pervasive socioeconomic divide, these estimates are rough. The calculation rounds down to the nearest $10,000 per year the incomes of respondents who chose to report an income bracket, as opposed to a precise estimate — 22% in the general ESC sample and 41% in the Aboriginal sample (these proportions do not include respondents who did not include any kind of household income estimate). The calculated averages are therefore likely significantly below their true values.

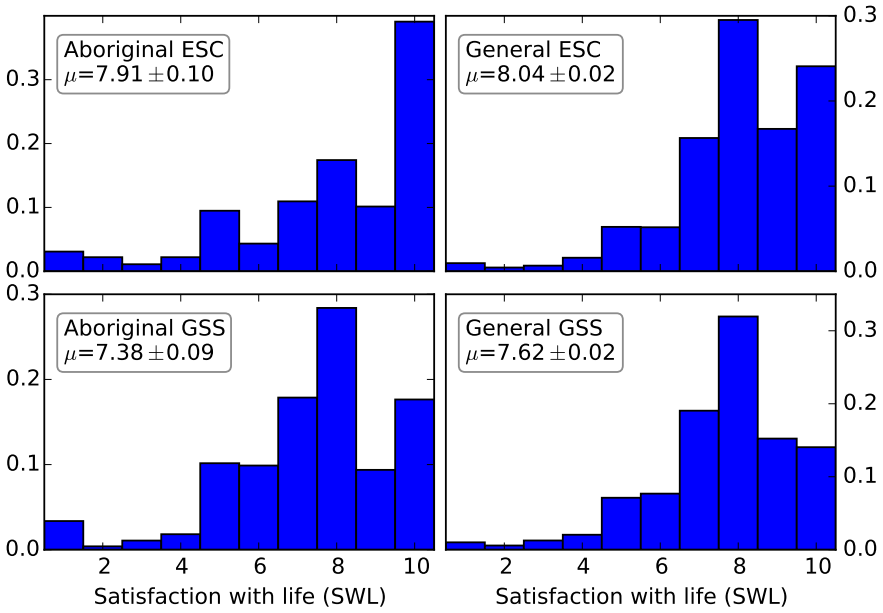

Figure 1: Histogram of life satisfaction responses in each data sample.

with regards to important socioeconomic indicators than is the primarily rural, on-reserve Aboriginal population sampled by the ESC survey. In the rest of this section, we discuss ways in which coefficients estimated using data from the Aboriginal GSS sample mirror coefficients estimated using data from the general GSS sample much more closely than do the coefficients estimated using the ESC counterparts. Differences between the explanatory power of variables in the Aboriginal and more general ESC data are discussed in the context of objective differences between the ESC Aboriginal and broader Canadian populations. That these objective differences do not characterize the GSS populations is consistent with the remarkable similarity across the GSS Aboriginal and general samples.

We next discuss the base model estimates. All final models are included in the Appendix.

5.1 Household income

The estimated coefficient on asinh(*household income*) is .30 ($p < .0005$) in the general ESC sample, which is consistent with the findings of Helliwell et al. (2010). However, in the Aborginal ESC sample, the income coefficient is estimated to be $-.37$ ($p < 0.10$). This negative relationship between SWL and income persists even if especially high-income/low-SWL observations are removed from the sample.

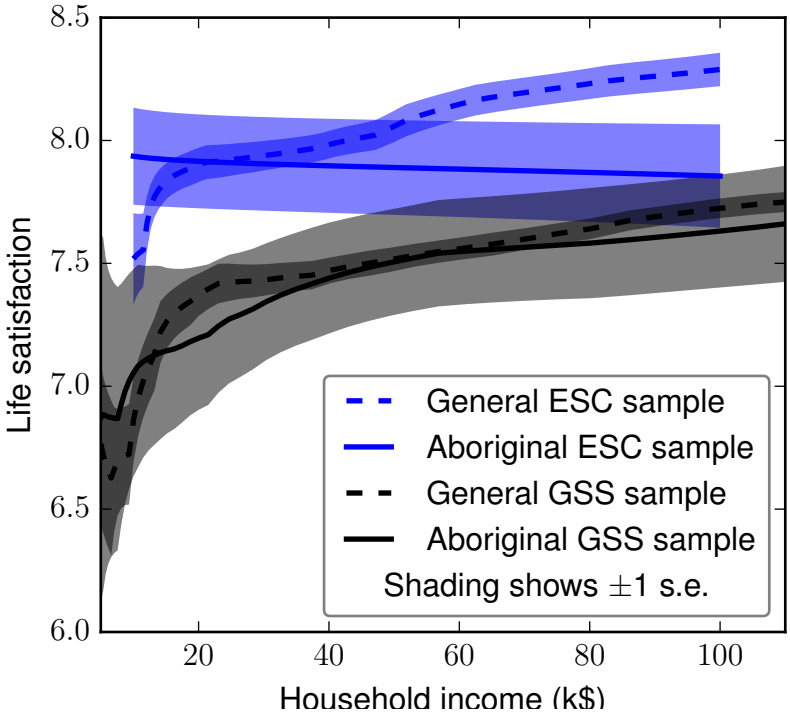

Figure 2: Kernel-weighted local polynomial smoothing of SWL versus household income

When a similar regression is run on the general GSS sample ($n = 14{,}895$), we find an income coefficient of .12 ($p < .0005$).[10] When the same regression is run on the Aboriginal GSS subsample ($n = 569$), the estimated income coefficient is insignificant and constrained to be significantly more positive than the value found in the Aboriginal ESC sample. It is, however, important to recognize that the GSS24 gives no information about the on-reserve status of Aboriginal respondents, and therefore does not capture differences in on- and off-reserve dynamics. Table 2 presents estimates for the differentiated on- and off-reserve Aboriginal ESC samples, none of which are statistically significant.

A non-parametric investigation of the bivariate relationship between income and SWL is shown in Figure 2. There appears to be some consistency in slope among three of the four samples, while the Aboriginal ESC group is, with weak statistical significance, divergent from the normal upward trend.

Could the weak or negative SWL-income trend be indicative of an absent

[10]The reader is reminded that the GSS model omits the family, friends, and trust variables. Any comparisons with the magnitude of the household income coefficient in the ESC models are therefore misguided.

	Coefficient	p-value	Sample size
Total sample	-.232	.200	559
Off-reserve sample	-.046	.871	166
On-reserve sample	-.244	.274	393

Table 2: Household income coefficients in Aboriginal models of SWL (ESC).

	Coefficient	$p-$value	Sample size
Total sample	$-.052$	.807	559
Off-reserve sample	$-.584$	.088	166
On-reserve sample	.077	.760	393

Table 3: Coefficients on a high school completion indicator in model of SWL, estimated using Aboriginal ESC data.

regressor? In both ESC samples there is a highly significant positive bivariate relationship between household income and a high school completion indicator *highschool*. It is easy to speculate that what appears to be an income-SWL relationship in the Aboriginal ESC models is actually an education-SWL relationship. If the high school completion indicator is included in the models, its coefficient is insignificant in the general and on-reserve samples, yet is $-.58$ in the off-reserve model with a $p-$value of .088 (See Table 3). Although this finding in the off-reserve sample is interesting in and of itself, the inclusion of the high school variable has little to no impact on the other regressors; most notably, the household income coefficients remain well within one standard error of their original values. These results do not change if $\log(household\ income)$ is deleted from the projected model and replaced with *highschool*. Education in itself cannot explain the inverse SWL-income relationship in the Aboriginal ESC sample.

5.2 Gender

The coefficient estimate on $female$ in the general ESC model is .20 ($p <.0005$). Interestingly, the female coefficient in the Aboriginal model is *almost twice as high*, with an estimated value of .48 ($p = .038$). The general estimate, however, falls within the 95% confidence interval of the Aboriginal estimate, although the converse is not true.

Interestingly, we note a significant difference between the $female$ coefficients in the on- and off-reserve Aboriginal ESC samples. The two samples are compared in Table 4.

5.3 Age

In the general ESC sample, the estimated coefficients on age and age^2 are consistent with the trend identified in Helliwell et al. (2010). A negative coefficient of -4.1 on the linear age term, and a positive coefficient 5.7 on the quadratic

	Coefficient	p-value	Sample size	% identifying as female
Total sample	.447	.038	559	51%
Off-reserve models	.643	.073	166	57%
On-reserve models	.402	.127	393	49%

Table 4: Coefficients on variable $female$ in Aboriginal models of SWL (ESC).

age term ($p < .0005$ for both coefficients) suggest that SWL is ∪-shaped with respect to age. More specifically the data suggest that, controlling for all other regressors, SWL levels tend to decrease with age until approximately age 36, and to increase thereafter. Age curves estimated for both the general and Aboriginal GSS samples are similarly shaped.

While the estimate for age in a quadratic form in the Aboriginal ESC model is not inconsistent with those of the ESC general sample or GSS subsamples, the coefficients are also not statistically different from zero. Estimates for the Aboriginal GSS data are drawn from a similarly sized sample ($n = 569$, while in the Aboriginal ESC sample $n = 559$), yet are much more significant. Removing the age^2 term to yield a model that is linear in age gives a more significant and positive coefficient from the Aboriginal ESC data. (see Appendix B for a model of SWL in the Aboriginal ESC sample incorporating age in a linear form).

To investigate the evolution of SWL over the life course in more detail, we estimate the nonparametric, unconditional (i.e., without controlling for other variables, as is done in the regressions described above) dependence of SWL on age in Figure 3. Separate estimates for each of the four samples show that the aboriginal sample relationships are consistent with their general population counterparts for each survey. While the ∪-shape is less distinct in the ESC data, a consistent pattern is the rise in reported satisfaction in older years, at least until retirement age.

5.4 Marital status

The *married* and *divorced* coefficients are similar in the general and Aboriginal samples, and reflect the findings in Helliwell et al. (2010). That is, being divorced, separated, or widowed is predictive of being significantly less satisfied as compared with those who are single or married, and that being married is generally predictive of a significantly higher life satisfaction than being single. Like other results we report in this section, these relationships hold after controlling for the other characteristics in the model.

5.5 Health

Meta-analyses have shown that there is a significant and persistent positive correlation between subjective health measures and SWB (Okun et al., 1984). Estimates from all samples are consistent with this finding.

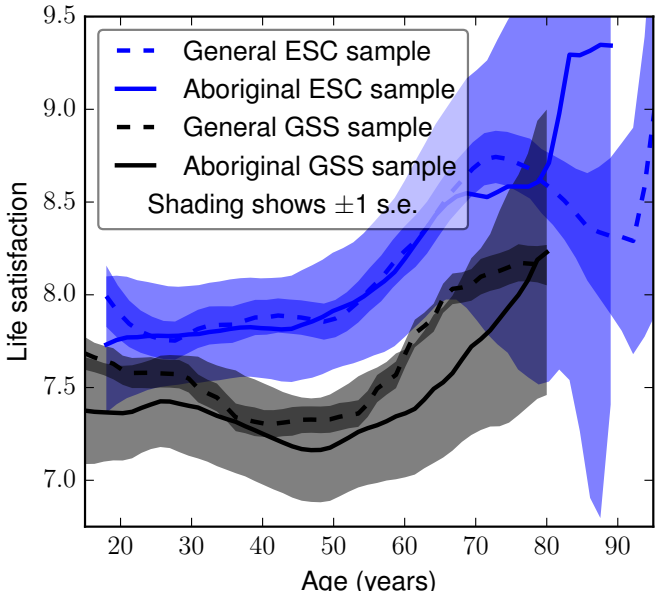

Figure 3: Kernel-weighted local polynomial smoothing of SWL versus age.

Interestingly, the coefficient estimate on *health* for the Aboriginal ESC sample is *almost twice as high* as the coefficient estimate in the general sample. However, there is significant overlap between each of their respective 95% confidence intervals.

5.6 Social support

Coefficient estimates for *family* and *friends* in the Aboriginal ESC sample are significantly higher than in the general ESC sample. *family* in the general sample has a coefficient of .37 ($p < .0005$), while *friends* has a coefficient of .64 ($p < .0005$). In the Aboriginal ESC sample, the estimated coefficient on *family* is .93 ($p = .020$), while the estimated coefficient on *friends* is 1.1 ($p = .011$). In other words, among the Aboriginal ESC sample, respondents that see their family or friends more often have a SWL level on average *a whole point higher*. This is consistent with literature that suggests that family (both immediate and extended) and community are central aspects of Aboriginal lifestyle and identity (Castellano, 2002; Chandler and Lalonde, 1998). Also indicative of the importance of social support to well-being, in a study of psychological distress on the James Bay Cree Kirmayer et al. (2000) find that having fewer than five close friends is significantly associated with a higher level of psychological distress.

Here we also note differences between the on- and off-reserve Aboriginal

	family		*friends*		*N*
	Coefficient	p-value	Coefficient	p-value	
Total sample	.927	.020	1.07	.011	559
Off-reserve	.957	.106	1.77	.004	166
On-reserve	.957	.056	.802	.137	393

Table 5: Coefficients on *family* and *friends* in Aboriginal models of SWL (ESC).

	family	*friends*
Off-reserve	.71 ("Several times a week")	.72 ("Several times a week")
On-reserve	.73 ("Several times a week")	.74 ("Several times a week")

Table 6: Mean levels of social support indicators in the differentiated Aboriginal ESC on- and off-reserve subsamples. Descriptions in quotations correspond to the response option that is *numerically closest to the sample mean.*

samples. Amongst the off-reserve subsample, the *friends* variable has a higher and more significant coefficient estimate than the *family* variable. The reverse is true for the on-reserve population.

From Table 5 we can see that estimates for *family* are similar in magnitude in the on- and off-reserve populations (although substantially different in significance). The highest and most significant estimate is in fact in the smallest subsample — the estimate on *friends* in the off-reserve subsample. Refer to 6 to see that differences in the arithmetic means of the social support variables are insignificant.

Here we also mention the potential explanatory power of geography. Restricting the general ESC sample to respondents in Alberta, Saskatchewan and Manitoba leads to an increase in the estimated coefficient of *friends* to .93 ($p < .0005$), although a decline in magnitude and significance in the estimated coefficient of *family*.

5.7 Institutional trust

The *institutional trust* coefficient is positive, consistent with the findings of Helliwell et al. (2010), and has a similar estimated coefficient in both models.

5.8 Number of children

Using the general ESC data, the estimated coefficient on *logchild* is .13 ($p = .021$). Using data from the Aboriginal ESC sample, the coefficient on *logchild* is *more than three times as high*: .46 ($p = .022$; see table A11). Estimated coefficients on *number of children* in both GSS samples are statistically insignificant.[11]

[11] This may be because the variable *numberof children* in the GSS data literally conveys less information, since it is capped at four.

5.9 Labour market status

Three dichotomous (indicator) variables capture some information about the labour market status of respondents, namely whether the respondent is a student, is unemployed, or is working (either employed or self-employed). The omitted category includes all statuses out of the labour market, including retirement, childraising, and home production. As mentioned earlier, inclusion of these indicators did not much affect the estimates of any other coefficients, including income. As with income, however, labour market indicators present interesting contrasts between the aboriginal populations and the general population, especially within the ESC survey.

In the general population samples, unemployment has an enormous negative effect beyond that associated with any loss of income. This finding is nearly universal in the broader literature. In addition, working in the labour market and being a student are both predictive of significantly lower life satisfaction than being out of the labour market (largely through retirement or home production).

The picture in the Aboriginal ESC estimate tells a different story. We find an insignificant (and weakly smaller than for the general population) coefficient on unemployment for aboriginal respondents in the ESC, and a highly positive effect of paid work. These differences may reflect the differing norms (objective conditions) in the population, since nearly a fifth of Aboriginal respondents report being unemployed, as compared with 6% in the general population, and only 47% of Aboriginal respondents report having a job, in comparison with 62% of the general population. Similarly, the proportion of respondents reporting retirement is nearly three times as high among the general population as in the Aboriginal ESC sample.

While there is other evidence for and against the contextual effect of higher unemployment rates mitigating the harm of individual unemployment (Clark, Knabe, and Rätzel, 2010; Oesch and Lipps, 2013; Chadi, 2014), we have not modeled the endogenous reference effects explicitly. Instead, a simpler interpretation of estimated coefficients is that in both cases they give the best estimate of the marginal benefits of changing our independent variables, such as individual employment status. Statistically, the magnitudes of coefficient estimates are not inconsistent across samples, but they are suggestive of a larger benefit of having a job and lower cost of being unemployed for the Aboriginal sample, as compared with being out of the labour force.[12]

[12] Employment and unemployment are not in general simply related because they both omit potential workers who are out of the workforce and not looking for a job, for instance because they are discouraged from trying, or are retired, disabled, or studying. Indeed the state of unemployment, or "looking for a job", is a subjective one and its meaning may vary with the context. In the present case, heterogeneity within the omitted category across our two samples may also be contributing to different baselines. The gap in coefficients between unemployed and employed is not statistically different between the two samples.

6 Difference accounting

Differences in attributes and circumstances between two groups can be used to explain the difference in an outcome such as life satisfaction using a Blinder-Oaxaca decomposition (Blinder, 1973; Oaxaca, 1973; Helliwell and Barrington-Leigh, 2010). This model separates differences in SWL into those due to differences in average group attributes and those due to differences in the importance (*i.e.*, coefficients in equation (1)) of those attributes. Figure 4 illustrates the first of these two contributions, known as the "explained" component. Using a common set of coefficients for the explanatory variables,[13] the decomposition accounts for the significantly lower mean SWL amongst the Aboriginal ESC sample as compared with that of the general population ESC sample. The difference, shown as a dark green bar with 95% confidence interval indicated by whiskers, is approximately 0.13 on the 11-point SWL scale.

The remaining bars illustrate the interpretation of a number of features of our results so far, as well as introducing new insights. While the model correctly predicts, based on differences in mean attributes between the two groups, that the mean Aboriginal SWL is lower than that of the general sample, it actually greatly overestimates this difference, predicting a $\sim$0.48 point lower response from the Aboriginal survey. This reflects one of the more surprising findings of the present investigation: that Aboriginals in the survey report a relatively high SWL in both the ESC and the GSS. The values shown by blue bars disaggregate the predicted difference according to contributions from each explanatory variable or group of variables. They have the following interpretation.

According to the importance of self reported health in explaining life satisfaction responses generally, the considerably lower health status reported on average by Aboriginals gives rise to a large predicted negative impact on their SWL. Similarly, other objective differences predict lower SWL for Aboriginals: lower incomes, a higher unemployment rate, lower marriage rates, younger average age (see Figure 3), and lower levels of reported trust. On the other hand, these detractors from life satisfaction are offset, in the Blinder-Oaxaca decomposition, by three factors predictive of higher Aboriginal SWL. Aboriginal respondents report significantly higher frequency of visits with family and with friends, both of which are strong supports for SWL, and they report higher numbers of children, which in our model is also predictive of higher SWL. The other factors included in our estimates did not significantly contribute to explaining the observed SWL gap.

The *Estimation results* section focused on differences in the size of effects estimated in our model. By contrast, the Blinder-Oaxaca decomposition interprets the two populations using a common set of coefficients. The discrepancy between observed and predicted ΔSWL in Figure 4 is largely a result of the inconsistency of estimated coefficients.

Note that the large explanatory contributions of income and unemployment,

[13] This decomposition is computed using a model estimated on a pooled set of the two ESC samples. This gives coefficient values very close to those discussed above and reported in Table A12.

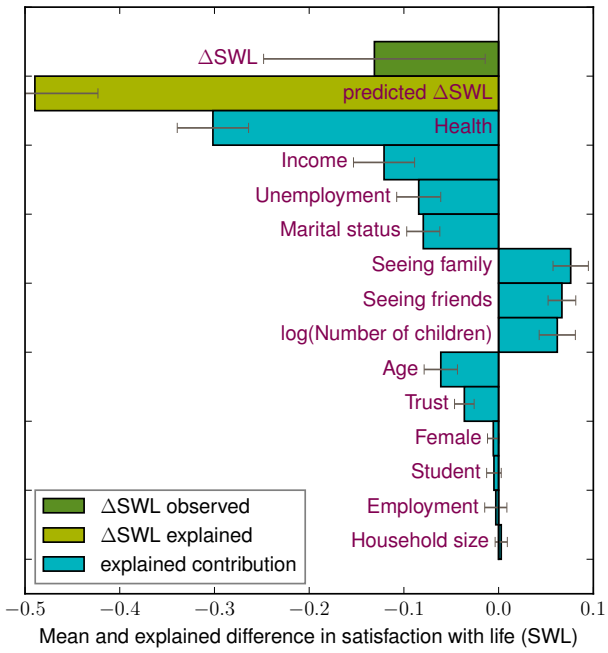

Figure 4: Using coefficients from a pooled estimate of equation (1), differences in mean attributes of Aboriginal respondents as compared with those of the general population are used to predict the difference in mean life satisfaction (SWL) responses between the groups, which are lower among the Aboriginal sample.

in particular, in Figure 4 reflect the general population effect strengths, while based on the estimates from the Aboriginal respondents, these conditions (curiously) have little impact. On the other hand, the socially-related factors of contact with family and friends, marital status, number of children, and trust would have quite similar predictive contributions under the alternative coefficients, as would both health and age. In addition, the effect of differences in the other levels of labour force statuses would mirror, with a similar magnitude, that of unemployment in our analysis. In the present context, employment and unemployment may amount to two sides of the same coin.

The view from this accounting thus presents a way to understand the observed difference in life satisfaction as an outcome of differing objective and subjective life conditions, while also highlighting the surprisingly small scale of that observed difference. The difference between the top two bars in Figure 4 may be said to quantify the surprise in the "surprisingly high" average SWL response by Aboriginals.

7 Conclusion

In summary, we find generally consistent patterns in the relationship between marginal differences in individual characteristics and reported life satisfaction between the aboriginal and general population samples in the ESC and GSS. These findings are therefore consistent with the standard interpretation of models of SWL like those presented here, implying that small changes in life circumstances may be expected to lead to changes in experienced well-being that are similar across groups. It also supports the kind of analyses done in the previous section and elsewhere in the literature, in which differences in life satisfaction among two or more groups is accounted for using their observed attributes and conditions. These conditions are possibly more directly or meaningfully amenable to influence through policy than life satisfaction itself, and thus both the Blinder-Oaxaca accounting and the baseline estimate coefficients may generally be interpreted as providing an indication of the well-being benefit of pursuing different proximate policy objectives.

On the other hand, not all marginal effects were estimated to be the same for the two groups. The primary factor in these differences was undoubtedly the small sample size available for Aboriginal respondents.

While the point estimates of the effects of *family*, *friends*, $female$, and number of children in the Aboriginal ESC sample are on the order of twice as large as those in the general population, these differences are only marginally significant statistically, and must therefore be subject to verification in larger studies. However, we find a significant distinction between the general and Aboriginal ESC samples with regards to the importance of household income, employment, and unemployment.

A negative relationship between household income and SWL among on-reserve Aboriginal respondents contrasts starkly to the persistent positive coefficient in the general Canadian population sample and the existing literature. Similarly, data provide no evidence for any normal positive conditional relationship between income and SWL among the off-reserve Aboriginals in the GSS and ESC.

One may react with two classes of response to such discrepancies. The first is to suspect that there is a problem with the SWL measure, in particular in its comparability across the differing circumstances faced by different communities and cultures. In this view, if the responses given by Aboriginals are nearly as high as for the rest of Canadians who have clearly better conditions, then the SWL measure is not to be trusted. Less dramatically, if the importance of different life circumstances in supporting high life satisfaction varies with context, it is difficult to use them to inform policy priorities and to make benefit-cost judgments. Also, in this case, the inferences made from measurements on the lives of the general population should not be used to make normative judgments about priorities for Aboriginal communities. Indeed, the Canadian Aboriginal experience is unique within Canada on several dimensions, including political, interpersonal, cultural and socioeconomic dimensions. The reduced-form estimates used here and in many analyses of SWL are always subject to the

caveat that causality almost certainly runs two ways between SWL and many of our "explanatory" variables. We can in this work shed only limited light on the nature of missing variables — or unique causal pathways among available variables — which are particularly important for our small and geographically-restricted sample of the Canadian Aboriginal community.

One particular feature is unusual in the SWL responses from Aboriginals and relates to possible measurement challenges and cultural norms. As shown in Figure 1, there is an enhancement at the three round-number focal points — 1, 5, and 10 — in the two Aboriginal samples as compared with their general population counterparts. Although the effect is hard to quantify without strong assumptions, this focusing on the extremes and midpoint of the scale could be sufficient to account for the "surprisingly high" high mean SWL response in these samples.

The other possible reaction is also cautious, and consists in looking for reasons to doubt the completeness of the limited set of explanatory variables on hand. This outlook is inspired by the remarkable consistency among coefficients estimated for SWL models across >150 countries around the world (Helliwell et al., 2010). In addition, as mentioned above, the statistical inconsistency in coefficients measured in the present study is actually quite limited; larger samples are needed for better resolution. Not only is the linear, stylized and "reduced form" model of equation (1) only a working model of how one might bring different conditions together to explain variation in experienced life quality (SWL), but it also reflects the limited set of variables at hand in the surveys. There may, for instance, be unmeasured aspects of life which are positive for Aboriginals and would go further towards explaining the relatively high SWL reports from Aboriginal respondents. As an example, the negative coefficient on income for on-reserve respondents suggests that some substitution is going on between market income and some other benefit. Indeed, the formal, or market, orientation of the standard income question is not appropriate for respondents with substantial direct natural resource income, such as subsistence hunting, or substantial non-market trade. Going further, less reliance on market income may even be associated with higher SWL, in accordance with the negative sign on the income term.

More broadly, a repeated lesson from quantitative studies on SWL is the importance of social supports over material ones. Our findings support this intuition, in that five social factors loom large in the accounting of Figure 4 and can explain both part of the SWL deficit in the Aboriginal sample as well as some of the advantage that comes with more frequent social and family interactions. Other social dimensions are important and may be particularly important for the Aboriginal population, but are not measured. For instance, the degree of cultural continuity has been shown to be protective against suicide Chandler and Lalonde (1998), but is not available in our model.

As promised at the outset, we remain somewhat agnostic on the interpretation of the patterns and apparent anomalies which the ESC and GSS data present. The analysis provided here may be evidence for bringing the increasingly ubiquitous SWL approach to populations who have so far been undersam-

pled. This method is established and standardized enough for evaluating human outcomes and experience in the broadest sense that the biggest anomaly in the Canadian data appears simply to be the near lack of measurements for some of the most disadvantaged in Canada.

Therefore, the policy implications from our findings, with all of the above caveats, may be stated as follows. In accordance with a trend among other populations and governments around the world, aboriginals in Canada might consider embracing the measurement of life satisfaction as an overarching measure of well-being which does not impose external priorities nor outside concepts of development. Secondly, any group doing so must also emphasize the measurement of a diverse set of measures, objective when possible, of the social supports of well-being, including measure of interactions and links, of trust in institutions and various groups, and of belonging and social identity. Thirdly, and tentatively, our findings suggest that these social supports should possibly rank higher in current development priorities than the huge and possibly more obvious material deficits faced by the aboriginals in our sample. Of course, these social supports are in principle, and also empirically based on international data, rather interwoven with material supports, but estimates like ours are meant to disentangle the marginal benefits of improving each.

The SWL approach consists in finding things that matter and have variation, and in then measuring those and evaluating their potential to improve life. If this approach to policy has the potential to be useful for Aboriginals, surveys asking about SWL must also cover the dimensions of peoples lives which matter. Those dimensions cannot be identified in advance, and doing so will always be an incomplete and ongoing task, and the details may vary with the population being surveyed. Above all, that insightful task will lie in the hands of the populations themselves.

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A Weighted mean levels of model variables

	Total Canadian		Aboriginal	
	ESC	GSS	ESC	GSS
Satisfaction with life (SWL)	8.0	7.6	7.9	7.4
Standard error	.03	.02	.11	.11

Table A1: Mean levels of self-reported SWL.

	Total Canadian		Aboriginal	
	ESC	GSS	ESC	GSS
Percentage	53%	51%	51%	55%

Table A2: Percentage of respondents identifying as female in each subsample.

	Total Canadian		Aboriginal	
	ESC	GSS	ESC	GSS
Age	44	43	38	37
Standard error (years)	.24	.19	.72	.89

Table A3: Mean age in each subsample.

	Total Canadian		Aboriginal	
	ESC	GSS	ESC	GSS
Health	.72 ("Pretty good")	.62 ("Good")	.49 ("Fair")	.56 ("Good")
Standard error	<.005	<.005	.01	.01

Table A4: Mean self-reported health level in each subsample. Descriptions in quotations correspond to the response option that is *numerically closest to the sample mean.*

	Total Canadian		Aboriginal	
	ESC	GSS	ESC	GSS
Household income (CAD 10,000)	57	73	34	56
Standard error (CAD 10,000)	.5	.5	1.4	.3

Table A5: Mean household income in each subsample.

	Total Canadian		Aboriginal	
	ESC	GSS	ESC	GSS
Unemployment/ nonemployment rate (%)*	5.9	36	19	42
High school completion rate (%)	84	75	50	59

Table A6: Unemployment/nonemployment and high school completion rates in each sample. *The unemployment rate in the ESC data is derived from the number of respondents that identify explicitly as unemployed. The GSS does not ask explicitly for a respondent's employment status, so we present the non-employment rate from the number of respondents that reported not having a job in the last week.

	Total Canadian (ESC)	Aboriginal (ESC)
Family	.53 ("At least once a week")	.72 ("Several times a week")
Friends	64 ("At least once a week")	.73 ("Several times a week")

Table A7: Mean levels of social support indicators in the ESC samples. Descriptions in quotations correspond to the response option that is *numerically closest to the sample mean.*

	Total Canadian (ESC)	Aboriginal (ESC)
Trust	2.3	1.9
Standard error	.02	.07

Table A8: Mean levels of institutional trust indicators in the ESC samples.

	Total Canadian		Aboriginal	
	ESC	GSS*	ESC	GSS*
Household size	3.6	3.0	4.8	3.2
Standard error	.11	.01	.12	.08

* The variable indicating household size in the GSS24 data is capped at six household members.

Table A9: Mean household size in each subsample.

	Total	Female	Male
Total sample	2.7 *(.12)*	3.0 *(.16)*	2.5 *(.17)*
Off-reserve	2.6 *(.24)*	3.1 *(.34)*	1.8 *(.30)*
On-reserve	2.8 *(.13)*	2.9 *(.19)*	2.6 *(.18)*

Table A10: Mean number of children of Aboriginal respondents (ESC). (Standard errors are in parentheses.)

	logchild		*N*
	Coefficient	p-value	
Total sample	.457	.022	559
Off-reserve	.399	.248	166
On-reserve	.513	.043	393

Table A11: Coefficients on *logchild* in Aboriginal models of SWL (ESC).

B OLS regressions of SWL in each sample

	(1) Aboriginal ESC	(2) Off-reserve	(3) On-reserve	(4) Aboriginal ESC	(5) General ESC	(6) ESC (AB, SK and MB)	(7) GSS (aboriginal)	(8) GSS
Female	.48	.61	.43	.48	.20	.023	.11	−.005
	(.21)	(.36)	(.26)	(.22)	(.050)	(.10)	(.21)	(.036)
age/100	−4.0	−1.79	−4.2	2.7	−4.1	−.23	−6.2	−6.1
	(3.8)	(5.8)	(5.1)	(.94)	(1.04)	(2.1)	(3.7)	(.67)
$(age/100)^2$	7.6	7.8	7.1		5.3	2.1	10.2	7.6
	(3.9)	(5.6)	(5.3)		(1.01)	(2.0)	(4.2)	(.69)
Married	.43	.035	.39	.35	.32	.52	−.11	.25
	(.26)	(.47)	(.32)	(.25)	(.069)	(.16)	(.23)	(.049)
Divorced	−.36	−1.12	−.20	−.36	−.44	−.28	−1.35	−.37
	(.34)	(.72)	(.40)	(.34)	(.098)	(.21)	(.47)	(.076)
Health	1.95	2.9	1.77	1.97	1.18	.69	2.3	2.2
	(.38)	(.62)	(.48)	(.39)	(.14)	(.32)	(.38)	(.076)
Seeing family	.85	1.00	.83	.82	.37	.18		
	(.39)	(.59)	(.49)	(.39)	(.092)	(.20)		
Seeing friends	1.05	1.74	.81	1.09	.65	.91		
	(.40)	(.62)	(.52)	(.39)	(.11)	(.21)		
Trust	.20	.15	.21	.21	.092	.17		
	(.073)	(.13)	(.087)	(.074)	(.018)	(.038)		
log(Number of children)	.47	.37	.53	.41	.12	.050	.18	−.018
	(.20)	(.35)	(.25)	(.19)	(.057)	(.13)	(.15)	(.032)
Employment	.82	−.0007	.98	.72	−.14	−.12	.15	−.15
	(.34)	(.42)	(.43)	(.34)	(.076)	(.14)	(.29)	(.050)
Unemployment	.043	−.004	−.020	−.038	−.82	−.89	−.31	−1.21
	(.39)	(.63)	(.47)	(.39)	(.15)	(.35)	(.52)	(.17)
Student	.53	.58	.57	.55	−.27	−.020	.17	−.28
	(.43)	(.57)	(.53)	(.43)	(.13)	(.26)	(.41)	(.086)
asinh(HH income)	−.37	−.014	−.41	−.39	.30	.22	.029	.11
	(.20)	(.30)	(.25)	(.20)	(.049)	(.10)	(.074)	(.023)
Household size	.002	−.16	.046	.011	.002	.004	−.003	.009
	(.056)	(.10)	(.066)	(.056)	(.005)	(.012)	(.12)	(.027)
constant	5.6	3.5	5.9	4.5	5.5	4.9	6.3	5.9
	(1.18)	(2.2)	(1.47)	(.97)	(.34)	(.71)	(1.30)	(.31)
obs.	559	166	393	559	5428	1252	569	14895
R^2(adj)	.191	.297	.160	.188	.110	.116	.145	.146

Significance: 0.1% 1% 5% 10%

Table A12: Base model estimates.