

The Well-Being of the Canadian Arctic Inuit: The Relevant Weight of Economy in the Happiness Equations

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Abstract Which of the three dimensions of Allardt’s model, “having, loving, and being”, best predicts the incidence of subjective feeling of well-being among the Canadian Arctic Inuit adults? To answer this question, two logistic regression equations have been constructed, one based on a negative assessment of well-being (feeling of despair), and the other on a positive assessment (satisfaction with life in the community). Each of them took first the form of a global model, and then of three scale models, one for each dimension of the Allardt’s model. The equations are likely to be more effective for predicting the incidence of Inuit’s feeling of satisfaction than for anticipating their feeling of despair. Furthermore, the “being” scale model is the one that will have contributed most to the predictive performance of the global model. In other words, what the Inuit “ARE” contributes more to the incidence of their satisfaction with life than what they “HAVE” or what they “LOVE”.

Keywords Well-being · Inuit · Economy · Canadian Arctic · Living conditions

*Those who say that money can't buy happiness.
don't know where to shop.
Anon.*

1 Introduction

Will Inuit get happier as they grow richer? In other words, can money buy happiness? This seemingly trivial question is the basis of many recent studies in social sciences.

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Sociologists, anthropologists and more recently economists¹ have taken quite an interest in this fascinating matter, both on an intellectual and political point of view. Many indicators, especially the results of psychology and sociology studies on self-declared happiness, suggest that it is possible to look at the subjective well-being with a systematic approach (Oswald 1997). Studies on people's happiness are no longer just a researcher's fantasy. Nevertheless, some are still sceptical as to the validity, reliability, and availability of the data on which such work must be based. Many feel that such studies have little heuristic relevance. Happiness being a relative condition, it becomes impossible to compare the results obtained within countries, between countries, or across time. Yet, several researchers have ventured into studying happiness,² but not in Inuit communities.

This article presents an ethical point of view of happiness as the basis for all human activities. In other words, it is not focused only on the presence, absence or even value of people's capital,³ but also on the meaning this can have in people's lives in general. Like Oswald (1997), we believe that economic performance, as measured by inflation rate, social inequality or unemployment is not relevant in itself, but only indirectly as a means to an end. The finality in question here is neither consumption nor accumulation of goods, but the increased feeling of well-being. "Economic things matter only in so far as they make people happier" (Oswald 1997: 1815).

This theoretical position relates to the thinking of Amartya Sen. Referring to a dialogue between two figures of an Indian mythology (Maitreyi and her husband Yajnavalkya) in a Sanskrit tale, Sen raises a fundamental question about economy: what is the purpose of wealth? In *Éthique et économie* (1993), he states that economics stems from two very separate and concurrent basis. One is said to be utilitarian or mechanical, while the other is ethical. The prevailing success of the former made that the ethical aspects have been neglected in the development of this field of study. Accordingly, Sen deplors that modern economics was considerably undermined by this separation of economics from ethics (1993: 11). By creating the *homo economicus*, modern economics⁴ has reduced humanity to its economic functions, focusing exclusively on the roles of economic agents constantly seeking to maximize their marginal efficiency. However, studies in psychology, sociology, and anthropology demonstrated that human behaviours are not always rational as per an instrumental or utilitarian approach (Schuller 2002; Weber 1971; Boudon 1979, 2007). This deviation of the discipline from its original ethical concerns almost concealed the fact that economics is not limited to the production, distribution, and consumption of wealth or material goods by society, but that it also pertains to a quest for the means to achieve happiness (Sen 1993). In agreement with Aristotle and Adam Smith, Sen maintains that

¹ Among these authors, we cite: Easterlin (2011), Angeles (2011), Stiglitz et al. (2009), Binswanger (2006), Easterlin (1995, 2001), Frey and Stutzer (2002a, b); Gardner and Andrew (2001); Hagerty (2000), Helliwell (2001), Kenny (1999); Lane (1993); Oswald (1997); Sen (1993), to name only a few.

² We refer here to the work of Easterlin (2011), Angeles (2011), Stiglitz et al. (2009), Tella et al. (2001a, b), Diener and Oishi (2000), Hagerty (2000), Diener (1984, 2000), Veenhoven (1997a, b, 1999), Myers and Diener (1995).

³ "In the field of economics, capital represents the goods used with labour and other production factors to produce goods and services. Capital includes the equipment, material, buildings, stocks, etc. In the business world, the word 'capital' often refers to the money available for investment. Capital is a very broad concept that encompasses public as well as private property, such as roads, bridges, airports, schools, hospitals, factories, computers, software, and transportation equipment." [Our translation] (Government of Canada 2007).

⁴ This conception of modern economics is the backbone of the neo-Classic school of thought lead by Léon Walras and Sir William Petty.

wealth is not finality, but merely a means to the pursuit of happiness. However, before taking this thinking further, it is important to specify our understanding of what is happiness or well-being.

1.1 Defining happiness

We leave it to the philosophers and theologians to address the ontological and philosophical aspects of this question. Like Raphaël Wintrebert, we will study happiness according to two major standpoints. The first “is based on ‘objective’ data and aims to measure the state of wealth of a country and the material comfort which its citizens must logically enjoy” (2007: 3). The second “is based on the ‘subjective’ assessment by the citizens themselves of their situation” (Ibid.). These two major standpoints and their various methodologies have made it possible to develop many instruments to measure Inuit’s well-being. The development of these measuring instruments gives rise to at least three major problems. The first is the scale of analysis to be used in order to take into consideration even the much localized variations. The second has to do with the causal relations: we have to discriminate, for example, the real impact of a country’s growth on the level of happiness of its inhabitants and eliminate all the bias and interaction effects. The last concern applies to how the current measurements can reflect the variations over time of what happiness means on an individual and collective standpoint.

As there is no consensus on its definition, and especially because the aggregated indicators that are meant to express overall happiness have been oversimplified and no longer reflect reality, therefore capturing a practical but not very reliable image of the actual situation, we will consider happiness as a general perception of the meaning of life, a subjective synthetic assessment of the quality of life as a whole. Like Schuller (2002), we presume that no one better than Inuit themselves can appropriately evaluate their life as a whole. “Research has shown that it is possible to collect meaningful and reliable data on subjective as well as objective well-being.” (Stiglitz et al. 2009: 16).

1.2 Measuring happiness

The “perceived happiness” can be measured because conventional tools for this purpose already exist. Quantifying such a qualitative judgment has some pitfalls, of which we are fully aware. We know that the results of such a process are bound to conceal an inherent subjective content (Stiglitz et al. 2009). This might lead to wonder if this subjective assessment concerns the *real living conditions* of the respondents or rather their *aspirations*, even their *standard of reference*.⁵ Generally, the way people assess their situation remains poorly defined and difficult to interpret.

Another criticism that may be made of the data generated by the questions used to measure happiness or satisfaction would be that it is not reliable and verifiable. Others may raise the objection that this is a difficult and relatively non-conventional measurement (Oswald 1997). Consequently the objective measurement of a concept as subjective as happiness appears to be impossible. However, in spite of all these pitfalls and objections, despite all the risks involved, we presume, like Isabelle Bellin (2007), that the best indicator of Inuit happiness or satisfaction, or in any case the *most accurate*, is the one that they express themselves.

⁵ See Alber and Fahey (2004: 38), Hagerty and Veenhoven (2003), Easterlin (2001), Diener and Oishi (2000) and Diener et al. (1999).

1.3 The determining factors of happiness

There remains the matter of what makes Inuit answer “Yes” or “No” when asked if they are happy or satisfied with their life in general. What might be the determining factors for the feeling of self-declared happiness? There are many answers to this question. In his work entitled *Le prix du bonheur*, Richard Layard (2007) listed at least seven factors that are essential to happiness: family relationships, financial situation, work, reference group and social network, health, individual freedom, and personal values. Frey and Stutzer (2000) maintain that happiness depends on four types of factors: personal characteristics (genetic factors predisposing an individual to depression for example), socio-demographic factors (age, gender, marital status, social position, etc.), economic factors (income, assets, etc.), and institutional factors (social status, religious beliefs). For many psychologists, social relationships are a determining factor for happiness, but not the only one. Along with participation in gratifying and motivating activities, the pursuit of a concrete and attainable goal, and the positive yet lucid perception of the world, the existence of a trust relationships that fosters safety and protection (friends and family) all have the capacity to promote or prevent happiness in individuals (Schuller 2002). To be more specific, Mihaly Csikszentmihalyi (2005) concluded, further to a longitudinal study based on 25 years experience of psychological research on happiness, that two prevailing factors determine happiness: a meaningful job, and quality relationships. So, the development of social networks also contributes considerably to personal well-being. Raphaël Wintrebert completes these observations with a comparative point of view that identifies at least four major factors for well-being: wealth, safety, freedom, and solidarity.

Although international comparisons seem rash, to say the least, various studies on the other hand make it possible to identify the essential factors that explain well being [...] People are clearly happier in rich, safe, free, equal, tolerant countries. Together these social qualities explain more than 63 % of the variation of average happiness! [Our translation] (2007: 4).

Based on these observations Wintrebert (ibid.) concluded, that in France the personal sphere (more so than work or wealth, for example) seems to foster a happy life, while the lack of money and time (far more than children, feeling of usefulness, love, and housing) are among the strongest impediments to happiness.

Apparently, money alone does not buy happiness but it can stand in the way of it. In addition to the economy, other factors are indispensable for the occurrence of such a feeling. If this were the case, what would be the relative weight of each of these determining factors, individually and collectively? Before answering this question, let us review what we know about the relationship between the wealth of a country, the income of its inhabitants, and the feeling of happiness.

1.4 The connection between the economy and happiness

For more than a quarter of a century, a large number of studies have dwelled on measuring the connection between wealth and happiness.⁶ Their results are not always convergent. This said, the current conclusions of research on the relationship between economy and happiness tend to confirm an ambivalent yet reciprocal relationship by virtue of which the

⁶ To our knowledge none of these studies systematically focused on the aboriginal populations of Canada, or even on the Inuit.

economy is a determining factor of happiness, just as happiness is a determining factor of economic performance (Schuller 2002).

This article evaluates to what extent the economy contributes to happiness among the Canadian Arctic Inuit. However, several avenues are available to explore this subject, such as: income (personal, household, national) as an indicator of purchasing power; paid work or unemployment; economic growth; assets; social capital; degree of happiness in wealthy countries as compared to poor countries and impact of increased income on happiness.

According to Schuller (2002) the various analyses of the relationship between income and happiness seem to demonstrate a positive correlation. Recently, Hagerty and Veenhoven (2003), through a long series of multinational statistics, confirm against the Easterlin's happiness income paradox,⁷ the hypothesis of a positive correlation between income and the degree of happiness. They assume that this relationship is not of a causal nature and that other variables also correlated with income could have influenced happiness.

A few details and nuances are necessary to understand the meaning of this positive correlation. Most of the studies tend to maintain that better economic performance, on a collective level, does not necessarily bring about more happiness.⁸ Oswald (1997) notes that self-declared well-being do not increase uniformly between countries and over time. It would even seem that the correlation between wealth and happiness varies between countries. Also, the fact that increased economic prosperity in a country brings about more happiness is not proven yet. Accordingly, Bernheim and Heylighen point out that this correlation is: "Strong in poor countries, but quite weak in wealthy countries." [Our translation] (Bernheim and Heylighen 2003: 5). In other words, the marginal utility of money seems to be major when there is little, and minimal when there is a lot. The economist Easterlin (1974, 1995) agreed with this. He revealed that personal happiness remains quite similar in wealthy and poor countries, and that economic growth did not induce increased well-being: "[...] in the one time series studied, that for the United States since 1946, higher income was not systematically accompanied by greater happiness." (1974: 118). Ronald Inglehart (2000) concluded as well that there is a threshold beyond which economic growth hardly affects the feeling of happiness: this is so because, among other things, other factors play an increasing role in the determination of happiness. We presume that these observations could apply to the Inuit people.

1.5 Work and happiness

A final determining factor of happiness which we want to address is unemployment. The authors all seem to acknowledge a very big difference between the level of well-being of the unemployed and that of the workers. It seems that when people become unemployed, their level of well-being is affected negatively. A report by the *Fondation européenne pour l'amélioration des conditions de vie et de travail* (2004) maintained that extended unemployment has a negative influence on the feeling of satisfaction: "Those who have experienced this situation clearly state being less satisfied with life as a whole, with their family life,

⁷ "The striking thing about the happiness-income paradox, said Easterlin, is that over the long-term—usually a period of 10 years or more—happiness does not increase as a country's income rises." (2011: Abstract).

⁸ Oswald (1997) notes that Great Britain like other industrialized societies, is twice as rich as it was in the 1960s and at least three times richer than after the war. But to what extent does this increase of real income bring about a surplus of happiness? Isabelle Bellin answers: while a large portion of the world is getting richer, "the proportion of people in developed countries who say they are very happy rarely exceeds 30 %" [Our translation] (2007: 1). This sounds like the Easterlin's Paradox revisited.

their social life and their health than those who have always been employed.” (2004: 32). Having a job means having an essential resource that generates not only an income but also social ties and a better quality of life. However, this assertion deserves a few nuances. Despite the improvement in the standard of living that sometimes goes along with paid work, stressful work conditions (overtime, intense and demanding work, lack of independence) may have detrimental effects on satisfaction with life in general. “Difficult work conditions clearly affect the degree of satisfaction regarding life in general ... [Our translation]” (Ibid: 34).

Moreover, in most countries, the main determining factor of well-being during unemployment seems to be money: contradicting the privation theory which emphasizes psychological factors, the decline of well-being among the unemployed is not always the consequence of lack of work in itself. It is often the result of financial pressure, which does not totally eliminate the effects of the psychological factors.

Although financial hardship is the most important predictor of poor mental well-being among the unemployed, it is not the only one. We can thus conclude that the decline of well-being among the unemployed is related first of all to the financial strain that most unemployed individuals experience, and secondly to the array of psychological implications of the loss of the latent functions of work. (Ervasti and Venetoklis 2006: 16).

These thoughts might well help to better understand the contemporary Inuit communities and to determine the bases of their subjective well-being today.

The aim of this article is to identify and examine the determining social factors of the Canadian Arctic Inuit’s subjective well-being. To do this, we will use the Erick Allardt’s model of well-being (1993), constructed in reaction to the classic research model. Allardt applies his model of well-being in three dimensions. The first, “having” (material and impersonal needs), refers to the financial and material situation (income, wealth, housing conditions, employment, working conditions, symptoms of illness or pain, availability of medical help, level of formal education). The second which he calls “loving” (social needs), is associated with human relationships, with the feeling of belonging to a group, and with the feelings of joy or sadness produced by these relationships. Finally, the “being” dimension (need for personal development) basically evokes the level of education, the psychological balance or the relationships of people with society and nature, etc.⁹

We will therefore attempt to determine which of these three dimensions of the model best explains the Inuit’s self-declared happiness. Our hypothesis is that the “having” dimension is not the main determining factor of well-being with the Canadian Arctic Inuit, but that it is rather the “loving” dimension as described above that is more relevant in their self-declared happiness.

2 Method

We followed a systematic research protocol. First, we evaluated the Canadian Arctic Inuit level of well-being. Then we attempted to establish if the well-being felt by the Inuit is

⁹ For the purposes of this study, we preferred to categorize the indicators of the feeling of membership, and any other indicator of social representation, in the “being” dimension, which becomes for us the identity component of the model. Of course, this appellation could raise some criticism and questions primarily because there is an argument that some indicators of the “loving” dimension are somehow expressions of identity. But, for now, we do not have a better taxonomy.

associated with the independent variables of the model. If so we verified whether or not there is a significant statistical correlation. This verification was based on the hypothesis that a significant statistical correlation indicates a capacity to predict the odds of an Inuk experiencing a feeling of well-being. Since the two indicators of our dependent (categorical) variable are a matter, at best, of an ordinal measurement, we were not able to verify the normality of their distribution and the homogeneity of their association, nor to carry out an analysis of the linear correlation or regression. We therefore used logistic regression analysis to estimate the prediction strength of each independent variable for each of the happiness indicators, and thus determined which among them explains or at least best predicts the Inuit's subjective well-being.

2.1 Data

This study is built primarily on the database of the *Aboriginal Peoples Survey (APS 2001)*, supplemented by the Canadian phase of the *Survey of Living Conditions in the Arctic (SLICA)*¹⁰ and 2001 Canadian Census databases. Even though the 2001 APS covered a random and representative sample of 117,241 respondents identified as aboriginals (Native Canadian, Inuk or mixed), our study is dedicated exclusively to the Inuit Nunaat (the Inuit homeland) comprising the four great Inuit regions of Canada, namely: the northern coast and the south-east part of Nunatsiavut; Nunavik in northern Quebec; Nunavut; and the Inuvialuit region. We therefore limited ourselves to the data collected from a representative sample of 10,775 Inuit¹¹ picked at random from 53 communities, providing a response rate of 83 %. The focus however was put on adult respondents, that is, the 5,144 Inuit respondents who were at least 15 years old.

2.2 Choice of indicators

Our database offers us three indicators to measure Inuit's well-being: one for the feeling of happiness (J01HAPY),¹² another for the feeling of despair (J01DOWN), and a third for satisfaction with life in the community (K13LIFE). Each indicator expresses an aspect of the feeling of well-being or despair experienced by the Inuit. For the purpose of this study, we

¹⁰ SLICA stands for *Survey of Living Conditions in the Arctic*. It is a statistical study of international scope on living conditions, based on a probabilistic sample, conducted with the Inuit of Alaska, the Canadian North and Groenland, with the Saami of Norway, Sweden and Russia, and with the Chukchis of the Russian Far East (Andersen and Poppel 2002). In essence, it is the first probabilistic survey of this magnitude, applied at this scale, which includes measurement of the objective living conditions of the Inuit (income, job market, housing, schooling level, health), their traditional activities such as hunting and fishing—these dimensions having been up till now studied separately from the other social situations, or studied for more limited geographic areas, generally communities—and which measures the point of view of populations on their own situation, that is, their subjective living conditions (perception regarding living conditions, social satisfaction, feeling of safety, psychological distress). Initiated in 1997, the SLICA research program comprises a national component and an international component. At the national level, the study was designed by an orientation committee made up of representatives from the regional Inuit associations (Inuvialuit Regional Corporation, Nunavut Tunngavik Incorporated, Makivik Corporation, Labrador Inuit Association), the national Inuit association (Inuit Tapiriit Kanatami) and Université Laval. The questionnaire thus created was included in the *2001 Aboriginal Peoples Survey*, administered by Statistics Canada.

¹¹ This sample excludes a community of about 5,455 people and the 21 reserves selected at the onset that did not participate in the study. The excluded communities are not identified by Statistics Canada.

¹² The specific question for this indicator is: "On a scale of 1–6, with 1 being never and 6 being always, how much of the time, during the last month, have you been a happy person?" Statistics Canada (2006).

Table 1 Distribution of the feeling of satisfaction with life in the community and the feeling of despair among the Canadian arctic inuit, 15 years and older, by region

Inuit regions	J01DOWN		K13LIFE	
	Feeling of despair		Feeling of satisfaction with life in the community	
	Never	Always	Dissatisfied	Satisfied
<i>Labrador</i>				
N	2760	400	170	3000
%	87.3	12.7	5.3	94.7
<i>Nunavik</i>				
N	4550	1360	560	4860
%	77.1	22.9	10.2	89.8
<i>Nunavut</i>				
N	9760	1880	900	10420
%	83.9	16.1	8	92
<i>Inuvialuit</i>				
N	1920	270	170	2080
%	87.6	12.4	7.7	92.3
<i>Total</i>				
N	18990	3910	1800	20360
%	82.9	17.1	8.1	91.9

Aboriginal peoples survey and survey on living conditions in the arctic, 2001

focus on the feeling of despair (J01DOWN) and satisfaction with life in the community (K13LIFE) as measurements of well-being.¹³

Our data clearly shows that depending on whether we consider the positive measurement (K13LIFE)¹⁴ or the negative measurement (J01DOWN)¹⁵ of well-being, the proportions of Inuit who declare being happy are different: 92 and 83 %, respectively (See Table 1). These proportions also change according to region. To be able to explain the incidence of self-declared well-being observed with these two indicators, we selected three categories of independent variables in the database. We called the first category “having”, the second “loving”, and the third “being”, each grouping several other indicators. To make an informed choice, we carried out an association analysis, using a Chi-square test (Pearson and Mantel Henzel) and an appropriate measure of association (Phi, V or D). These tests helped us select the indicators meaningfully associated (threshold of 5 %) with the two indicators of our dependent variable. For satisfaction with life in the community, we selected: status on the job market (LFSTATUS); economic family income (EFINC); census family income (CFINC); housing status (H09RPAR); highest level of schooling obtained (HLOS); solidarity of the nuclear family (J02SOLIDFAM); solidarity of the extended family (J02SOLIDOPENFAM); strength of family ties (J05TIES); the exercise of

¹³ It could be interesting to discuss how much these indicators are suitable to measure well-being. But, it is not the purpose of this study .

¹⁴ The specific question of the survey is: “All things considered, are you satisfied or dissatisfied with your life at present in this community? Is that somewhat or very satisfied? Dissatisfied? Don’t know?” Statistics Canada (2006)

¹⁵ This dependant variable is associated to this question: “On a scale of 1–6, with 1 being never and 6 being always, how much of the time, during the last month, have you felt so down that nothing could cheer you up?” Statistics Canada (2006)

traditional activity (ACTCOUTUM); geographic mobility indicator (K22MOV); level of psychological distress (MHI5); and self-evaluation of the state of health (E01HLTH).

On the other hand, for the feeling of despair, we chose the following variables: status on the job market (LFSTATUS); housing status (H09RPAR); highest level of schooling obtained (HLOS); total number of health problems (NUMCOND); health condition (HLTHCOND); solidarity of the nuclear family (J02SOLIDFAM); solidarity of the extended family (J02SOLIDOPENFAM); existence of strong family ties (J05TIES); solidarity of the social network (J02REZOSOCIAL); the practice of a traditional activity (ACTCOUTUM); geographic mobility indicator (K22MOV); geographic inertia indicator (G01NMOV); level of psychological distress (MHI5); self-evaluation of the state of health (E01HLTH); and language spoken at home (HLNABDR).

To facilitate the analysis and make our models less unwieldy, we used the economic family income as the only measurement of the Inuit's income,¹⁶ solidarity of the extended family as the only measurement of family solidarity,¹⁷ and the geographic mobility indicator as the only measurement of the feeling of belonging to the territory.¹⁸ We also grouped all the independent variables, respecting our analytical canvas based on the three dimensions of well-being (having, loving, and being). Our iterated research question consequently becomes: Which of these three dimensions, as measured, best predicts the incidence of a subjective feeling of well-being among the Canadian Arctic Inuit?

2.3 Modelization

To answer this question, two regression models have been constructed, one based on a negative assessment of the well-being (feeling of despair), and the other on a positive assessment (satisfaction with life in the community). As the purpose of each of these models is to determine the relative importance of the independent variables in the explanation or prediction of the incidence of self-declared well-being, the regression coefficients obtained for each of them, using the SPSS software, has been made on the same comparison scale. By comparing them, we have been able to discriminate those that have the greatest predictive contribution. So, we constructed a logistic regression model for Arctic Canada as a whole, for each of the dependent variables, integrating one by one (Forward Stepwise) the independent variables with the most statistically significant predictive effectiveness. Then an algorithm determined at each step if a variable must be added to the model. Next, we discriminated the changes in the configuration of our regression equations for each of the three scale models constructed.

2.3.1 Colinearity diagnostic

Before performing the logistic regression test, it was important to verify that there was no needless redundancy in the model, which would negate the correlation matrix and therefore overestimate the effect of the associated variables. This verification is called the colinearity diagnostic. The global model did not seem to present any colinearity problems, be it on the

¹⁶ We thus propose that the income of the extended family better reflects the situation of the Inuit of Canada than the income of the nuclear family.

¹⁷ The same postulate of the predominance of the extended family as compared to the nuclear family also prevails in matters of solidarity.

¹⁸ The hypothesis here is that the intention of moving attests at least as much to the prevalence of the feeling of belonging to the territory as geographic inertia.

basis of the tolerance threshold (α varies between 0.846 and 0.983 for satisfaction with life in the community, and between 0.840 and 0.984 for the feeling of despair), or on the Variance Inflation Factor (VIF varies between 1.018 and 1.127 for the feeling of satisfaction, and between 1.017 and 1.141 for the feeling of despair), or even on the Eigenvalue or the Condition Index. The independent variables did not seem to be self-correlated, that is, to exercise an interaction effect in the model. This was also true for the scale models constructed for the “having”, “loving”, and “being” dimensions.

Furthermore, in general the Hosmer and Lemeshow test revealed a poor fit of the global model for both satisfaction and despair. The degree of significance of this test for most of the steps of the Forward Stepwise procedure might lead us to believe that the global model would not fit well with the data. At least three factors would be in question: on the one hand, a large number of missing cases, then the qualitative nature of almost all of our predictors; on the other hand, the relative weight of the sample required by Statistics Canada as a disclosure control measure.

3 Results

3.1 Predicting the Canadian Arctic Inuit’s Feeling of Satisfaction with Life in Their Community

The global model excludes nearly two-thirds (62.3 %) of the sample. The degree of significance of the Wald statistical measure indicates that at least one of the predictors of the global model obtained would not be zero. This is also what indicates the degree of significance of the omnibus test coefficients. The classification table nonetheless reveals a very good level of predictability, since the values predicted by our model would be valid (that is, the subjects are correctly classified) in 92 % of cases. Despite this good predictive capacity, it is very likely that our global model explains only 23 % of the variance in the Inuit’s feeling of satisfaction with life in their community. Given the exploratory nature of this study, this predictive efficiency seems more than satisfactory.

If our data is correct, the five best predictors of the Inuit’s feeling of satisfaction with life in their community would be, in decreasing order of significance: self-evaluation of health condition; geographic mobility index; status on the job market; strength of family ties; and solidarity of extended family. With the exception of frequency of alcohol consumption, all the other indicators of our model are statistically significant, but their predictive capacity proved on average to be lower than that of the indicators listed above.¹⁹ So, the chances for an Inuk who considers himself in good health to be satisfied with life in the community are likely higher than those of an Inuk considering himself in poor health. They nevertheless all have less chance of experiencing a feeling of satisfaction than those who deem themselves to be in excellent health. Similarly, the chances of an Inuk who is not considering moving to be satisfied with life in the community are more than four times those of an Inuk who is considering moving ($B = 1.416$, $\text{Exp}(B) = 4.121$). The intention of mobility would then be a good indicator of substantial social dissatisfaction. The trend is the same for the housing conditions. The odds for an Inuk living in housing that is in good

¹⁹ It is worth specifying that these indications reflect an average effect, that is, the combination of the partial effects of the dimensions of our independent variables. Taken alone, the order of importance of the predictors would be altogether different.

condition to be satisfied with life in the community are 1.42 times better those of Inuit living in housing that needs major repairs (See Table 2).

In terms of status on the job market, the analysis provides evidence that not being part of the active population or being unemployed reduces the chances of Inuit being satisfied with life in the community, as compared to the employed ($B = -0.862$ for the unemployed and $B = -0.925$ for non-active; $p < 0.05$), these odds-ratios being respectively, 0.422 and 0.397. This indicates that the fact of being unemployed considerably affects the Inuit's feeling of satisfaction: the unemployed have only 42 % of the chances of the employed experiencing a feeling of satisfaction with life in their community.

Furthermore it seems that the more the Inuit have strong family ties, the more they are satisfied with life in their environment. Those who enjoy such ties have a little under twice as many chances than their peers who do not have strong family ties ($B = 0.638$; $\text{Exp}(B) = 1.892$) of experiencing such a feeling of satisfaction. The importance of social relationships is made more prominent by the extended family's support in times of need than by support of the social network. In fact the Inuit who enjoy the support of their extended family have twice as many chances of experiencing a feeling of satisfaction than those who do not. However, the influence of participation to traditional activities on the Inuit's feeling of satisfaction seems to have little weight in the balance of predictors of this feeling ($B = 0.28$ and $\text{Exp}(B) = 1.322$). As such, the model excludes the *support of the social network in times of need* from the group of the significant predictors of the feeling of satisfaction (Table 2).

The "education" variable presents some significant nuances. With the exception of the illiterate, for whom the chances of satisfaction are four times those of Inuit with at least a post-secondary certificate or degree, Inuit who have not received an education above a post-secondary degree have less chance than their peers with a higher level of education of being satisfied with life in their community.

Likewise the chances of being satisfied with life in their community for an Inuk who speaks another language than Inuktitut at home, are higher than those of an Inuk who speaks solely Inuktitut ($B = 0.448$; $\text{Exp}(B) = 1.565$). In our opinion there is some confusion here. It is not only the language spoken at home that affects the Inuit's feeling of satisfaction, but as well the socio-demographic characteristics (age, schooling, income, state of health, social network) of the population constituted on the basis of this criterion. Odds are that the Inuit who speak only Inuktitut at home are in majority those who do not master a second language, and by the same token are of a certain age, have little schooling, low personal and household income, a poor social network, etc.

The low statistical significance of the predictive performance of the other predictors takes nothing away from their practical relevance. In fact, except for the second decile where no significant relationship has been found, regression analysis of our model reveals a positive relationship between the economic family's income and the Inuit's feeling of satisfaction. This means that the likelihood of an Inuk to be satisfied with life in the community increases when his family income increases. However, it is necessary to qualify this overly general statement, as this relationship is very likely not rectilinear. In fact the chances of an Inuk in the second decile²⁰ being satisfied with life in the community are 1.11 time those of an Inuk in the first decile being so. Successively, the odd ratio increases to 2 times for the third decile, 0.76 times for the fourth, 1.60 times for the fifth,

²⁰ The statistical relationship between this dimension of the income variable and the feeling of satisfaction is not significant.

Table 2 Logistic regression of factors associated to the satisfaction with life in the community and the feeling of despair of the Canadian arctic inuit, 2001

Constant	Satisfaction with life in the community? (YES)		Feeling of despair? (YES)	
	Global model Ex(B)	Scale models Ex(B)	Global model Ex(B)	Scale models Ex(B)
<i>Having model</i>				
Economic family income (Ref = <14,739)				
14,740–22,458	1.110	1.257	0.907	1.01
22,459–30,118	2.00***	1.419***	0.664***	0.705***
30,119–37,449	0.760	1.067	0.465***	0.481***
37,450–45,097	1.6**	1.833***	0.722***	0.656***
45,098–53,472	1.850***	1.47**	0.782**	0.795***
53,473–64,600	1.415*	1.273**	0.472***	0.525***
64,601–77,354	1.015	1.517***	0.851	0.816**
77,355–102,050	1.520	1.878***	0.485***	0.554***
102,051 and more	1.47***	1.505***	1.003	0.65***
Status on job market? (Ref = employed)				
Unemployed	0.422***	0.494***	1.261***	1.208**
Non-active population	0.397***	0.515***	1.098	1.154**
Housing needs major repairs? (Ref = yes)				
No	1.42***	1.624***	0.5***	0.576***
Higher level of education? (Ref = post-secondary certificate or degree)				
Illiterate	4.6***	2.179***	0.413***	0.932
Less than a secondary certificate	0.6***	0.965	1.135	1.109
Secondary certificate	0.55***	0.940	0.627	0.891
Post-secondary certificate or degree	0.46***	0.694***	1.143	1.324***
Number of health problems (Ref = none)				
1 problem	***	1.105	1.319***	1.458
2 problems	***	1.148***	0.863***	0.931***
3 problems	***	0.403***	0.661***	1.133***
4 problems		3.432***	0.804***	1.118***
5 problems and more		0.514	0.381***	0.784***
<i>Loving model</i>				
Get extended family support? (Ref = no)				
Yes	***	1.889***	0.526***	0.513***
Practice traditional activities? (Ref = no)				
Yes	1.322***	1.373***	0.837***	0.790***
Have strong family ties? (Ref = yes)				
No	1.892***	2.469***	0.535***	0.473***
<i>Being model</i>				
Considering moving? (Ref = yes)				
No	4.121***	3.524***	0.573***	
Language spoken at home (Ref = inuktitut)				
Other language	1.565***	1.442***	0.789***	***

Table 2 continued

Constant	Satisfaction with life in the community? (YES)		Feeling of despair? (YES)	
	Global model Ex(B)	Scale models Ex(B)	Global model Ex(B)	Scale models Ex(B)
Perceived health state? (Ref = excellent)				
Very good	**	0.65***	0.953	
Good		0.557***	1.215	***
Poor	***	0.24***	2.063***	***
Bad	***	0.07***	3.302***	***
Frequency of alcohol consumption (Ref = at least 4 times per week)				
Less than once a month		1.331	1.194	
Once per month		1.273	1.469**	
From twice per month to once per week		1.556**	1.242	
2–3 times per week		1.484	1.062	

Source Statistics Canada, *Aboriginal Peoples Survey and the Survey of Living Conditions in the Arctic*, 2001

*** $p < 0.0001$; ** $p < 0.001$; * $p < 0.01$

1.85 times for the sixth, then progressively 1.415 times, 1.015 times, 1.52 times, and 1.47 times for the last deciles, the reference category being the first decile (Table 2).

The relationship between the economy, more precisely income, and happiness is therefore in all likelihood not linear. Our study identified three ascending trends in this relationship: the first goes from the first to the third decile of family income; the second, from the fourth to the sixth decile; and the third from the seventh to the ninth decile, leaving aside the eighth and tenth deciles, whose statistical relationship with the feeling of satisfaction²¹ is not significant. We must acknowledge that these ascending trends could have been hidden by setting aside the third and fourth decile which represent the cases in which the chances of predicting the Inuit's satisfaction are at their extreme values, then the seventh and eighth deciles in which the relationship is neutralized by a parabolic representation so that up to a certain threshold (the sixth decile), an increase in the Inuit's income seems to increase their chance of being satisfied with life in their community. Beyond this threshold, the chance appears to decrease until the statistical relationship is neutralized at the tenth decile.²²

Several explanations may be possible for such a scenario. The studies of Lane (1991, 2000), Inglehart (2000), Frey and Stutzer (2000), and Diener and Suh (2000) demonstrated that an increase in the income of the most underprivileged individuals may not necessarily result in the improvement of their subjective well-being, but would simply meet their basic needs. Once these fundamental needs are met, happiness no longer varies according to income. Moreover, the first ascending trend observed is symptomatic. The second trend is

²¹ The statistical relationship with the feeling of despair is clearly less nuanced. Only two trends are identified: one downward (from the first to the fourth decile), and one upward (from the fourth to the last decile), setting aside the seventh, ninth and tenth deciles.

²² Let us mention that like the second and fourth deciles, the eighth and ninth deciles are not significantly associated with the Inuit's feeling of satisfaction. Not only does the statistical significance of the coefficients of these deciles reject the null hypothesis (Sig. > 0.05), in the confidence intervals calculated for each coefficient B, the odds-ratio takes the value of 1.

rather based on a comparison that people make between their marginal usefulness and that of the people around them. This perhaps validates the fact that the correlation to happiness proves to be more pronounced for relative wealth than for absolute wealth, as if the higher level of happiness generated among middle-income Inuit (4th, 5th, and 6th deciles) came from the subjective assessment of their conditions as compared to that of others. By virtue of this hypothesis, higher incomes may in certain cases be associated with a lower degree of happiness. Let us complement this observation with this remarkable comment by Schuller: “[...] up to a certain level, absolute income has a direct impact on happiness; beyond this level, it is basically the relative income that is to be taken into account [Our translation]” (2002: 8). Finally, the third ascending trend observed depends on the possibility of accomplishing certain social obligations or aspirations, and on the esteem and privileges that are associated with them.

Incidentally, the Canadian Arctic Inuit appeared stratified regarding the finality of happiness. Three different reasoning, one for each economic stratum, seem to be responsible for the improvement in the feeling of happiness: meeting basic needs for the lower-income earners; the relative importance of marginal usefulness for the middle-income earners; and the accomplishment of social obligations or personal aspirations for the upper-income deciles. In every case the individual aspirations may be an interaction factor. As noted by Schuller (2002) and Easterlin (2001), if individuals have relatively identical material aspirations, with aspirations remaining constant, an increase in income will entail a surplus of happiness (positive association between income and happiness). However, if the aspirations were to change over time, this alteration could entail a freeze on the degree of happiness. In other words even if income increases, if aspirations increase simultaneously the degree of happiness will remain constant. Schuller (2002) concluded that it is basically the changes in aspirations, either over time or in the nature of the aspirations, which make it possible to explain the paradoxical relationships²³ between income and happiness: “With given aspirations, a higher income provides a higher degree of happiness. This assertion is normally verified at the beginning of the life cycle (young adult). Over time growth in income generates an increase in aspiration levels, thus keeping the degree of happiness more or less constant, stable [Our translation]” (2007: 8).

3.2 Learnings from the scale models

First, the “having” model excludes a smaller number of Inuit (29.5 %) from the sample. However, this does not improve its goodness of fit. Not only does it still fail to reflect the data, but it likely explains the 5 % variance in the Inuit’s feeling of satisfaction, and this even though it hits the mark in 92 % of cases. The statistical relationships keep the same structure for the “having” scale model, even though the latter does not exclude the “number of health problems diagnosed” variable. This variable only starts to be significant as from the diagnosis of a minimum of three health problems. The two best predictors are *status on the job market and condition of housing*.

²³ In the literature, there is no shortage of examples where there is a discrepancy between the quality of life and the feeling of well-being, where income level contrasts with the degree of happiness. At least two concepts seem to help explain these cases: the dissatisfaction dilemma encountered when optimal external conditions are associated with a subjective perception of low degree of happiness (this would be the case of the higher deciles), and the paradox of dissatisfaction that befits the case in which a high degree of happiness is associated with difficult external conditions.

Even though the “loving” model excludes only 18 % of the cases, fits very well with the data (Sig. > 0.05) and hits the mark in 91 % of cases, it explains only 5.7 % of the variance in the Inuit’s feeling of satisfaction. This predictive efficiency is primarily due to the strength of the family ties (Exp(B) = 2.465) and the solidarity of the extended family (Exp(B) = 1.889). The chances of an Inuk with strong family ties being satisfied with life in the community are worth nearly 2.5 times those of an Inuk without such ties: the ratio is 1.9 times for solidarity of the extended family, and 1.4 times for the practice of traditional activities. The model excludes support of the social network in times of need.

Finally, although it excludes more than half (55 %) of the sample and remains poorly fitted with the data, the “being” model explains up to about 11 % of the variance in the Inuit’s satisfaction with life in their community—double the performance of the other two scale models. This better predictive performance is primarily attributed to the self-evaluation of health condition. The better the Inuit deem their health condition, the more satisfied they are with life in the community. This, anyway, is what is indicated by both the regression coefficient sign and the odds-ratios. The chances of being satisfied of Inuit who deem themselves to be in good health are worth 55 % of those of Inuit who deem themselves to be in excellent health, 10 points less than those with a very good health assessment. The ratios decrease until they are negated as the self-evaluation deteriorates. Likewise the chances of satisfaction of Inuit who are not considering moving are worth more than triple (3.5 times) those of Inuit who are considering moving. The language spoken at home and the frequency of alcohol consumption have a slight incidence on the Inuit’s feeling of satisfaction.

3.3 Predicting the Canadian Arctic Inuit’s Feeling of Despair

As regards the feeling of despair, the global model excludes more than 60 % (61.5 %) of the sample. Although it correctly classes the values predicted in 84 % of cases, it remains poorly fitted with the data, according to the degree of statistic significance of the Hosmer and Lemeshow test (sig. \leq 0.010 for the majority of the steps). Our model appears to be less effective in predicting the feeling of despair than it was for the feeling of satisfaction. In fact it explains only 14.6 % of the variance in the feeling of despair experienced by the Inuit. Given the exploratory nature of the study, this poor performance has a practical relevance.

If our data is correct, the best predictors of the feeling of despair are, respectively, in decreasing order of significance: strength of the family ties; support of the extended family in times of need; condition of housing; geographic mobility index; and economic family income. Excepted for the social network, the other variables of the global model help to predict such feeling, but less significantly than the predictors listed above.

Thus in the global model Inuit living in housing that is in good condition are less likely (slightly more than half the chances) to experience a feeling of despair than those whose housing needs major repairs. The same applies to those who can rely on strong family ties as compared to those who cannot, and those who have no intention of moving as compared to those who are considering moving.

Likewise the Inuit who are unemployed and not active have more chance (the odds-ratio is equal to 1.26 and 1.10 times, respectively) of experiencing a feeling of despair than those who have a job. However, the relationship is negated for the non-active Inuit. Those who speak solely Inuktitut at home also have fewer chances (79 %) of experiencing a feeling of despair than those who speak another language at home.

Similarly to the feeling of satisfaction, certain statistical relationships are more nuanced in the global model in predicting the feeling of despair. For example although there does not seem to be a relationship between the health condition and the feeling of despair for Inuit who deem that they are at least in very good health, the statistical relationship seems to assert itself and strengthen considerably between poor health and the feeling of despair as the self-evaluation deteriorates. Inuit who deem their health condition to be acceptable have double the chances of those who deem themselves to be in excellent health of experiencing a feeling of despair, and the chances triple for those who deem their health to be poor.

Furthermore, for the global model the regression coefficient sign of the deciles indicates a negative relationship between the economic family income and the Inuit's feeling of despair. In other words it is very likely that as an Inuk's family income rises, the less he or she is likely to experience a feeling of despair. For example the chances of Inuit in the second decile of experiencing a feeling of despair are less than those of Inuit whose family income is among the lowest (first decile).²⁴ Still, in comparison with the latter, the chances continue to decrease between the second and fourth decile. Except for the seventh decile and the ninth decile where they are slightly less than half the chances of Inuit in the first decile, the odds ratio for Inuit to experience a feeling of despair starts to increase from the fourth decile up to the last where the relationship is negated.

3.4 Scale models

Everything leads us to believe that the construction of scale models for the “having”, “loving”, and “being” dimensions did not change much for the general trend of the global model. The “having” scale model excludes less than 30 % of the sample. (27.6 %), fits poorly with the data, and gives accurate predictions in only 83.5 % of the cases. Mainly it is important to note its poor predictive performance: it explains in all likelihood only 4.2 % of the variance in the Canadian Arctic Inuit's feeling of despair. The predictors that are most significant of this performance, as low as it is, are the condition of housing and the economic family income. It is significant to note the poorer performance of the number of health problems, schooling level, and status on the job market in predicting the feeling of despair.

As to the “loving” scale model, it excludes a lesser portion of the sample (15 % of missing cases). Although it fits very well with the data (Sig. > 0.05) and hits the mark in 82 % of cases, it explains in all likelihood only 5.7 % of the variance in the Inuit's feeling of despair. Its predictive performance is then similar to that of the “having” dimension. It owes this poor predictive performance to the strength of the family ties and solidarity of the extended family in times of need. The “loving” scale model excludes the support of the social network in times of need from the group of predictors of the Inuit's feeling of despair.

Finally the “being” scale model excludes, as in the case of the feeling of satisfaction, more than half (54.8 %) of the sample. Although it correctly predicts in 91.6 % of cases, it fits poorly with the data. However, it explains in all likelihood 4.6 % of the variance in the Inuit's feeling of despair, that is, about the same predictive performance of the “having” and “loving” dimensions. The “being” scale model excludes the frequency of alcohol consumption from the group of predictors of the Inuit's feeling of despair.

²⁴ However, the statistical relationship is not significant for this decile.

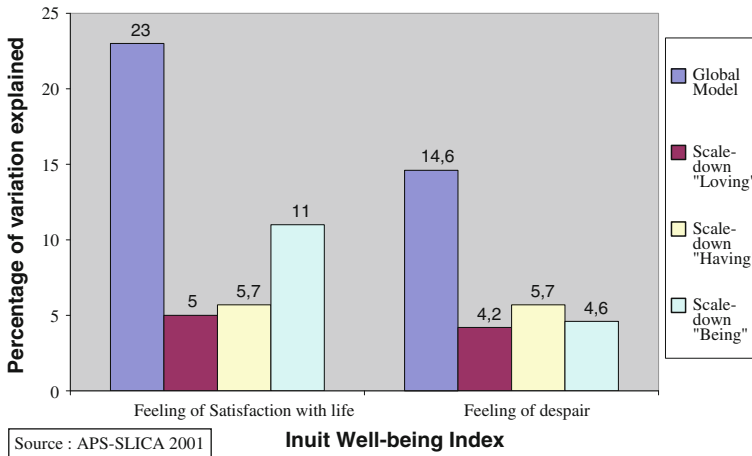


Fig. 1 Predictive performance of the regression models for inuit well-being, %

4 Conclusion

In the final analysis, Inuit happiness can be measured, and we have just assessed it. All the equations of the Inuit's self-declared happiness, that of the global model as those of the scale models, have proven to be more effective for predicting their feeling of satisfaction than for anticipating their feeling of despair (Fig. 1).

All things considered, the "being" scale model is unquestionably the one that will on average have contributed most to the predictive performance of the global model, and this more so in the case of the feeling of satisfaction than of the feeling of despair. In other words, what the Inuit "ARE" contributes more to their happiness than that what they "HAVE" or what they "LOVE". The fact is that although the contribution of what the Inuit have to their satisfaction with life remains modest as compared to "identity" variables (ARE), it prevails in the prediction of their feeling of despair.

These observations are consistent with the position of Alber and Fahey (2004) regarding the importance of the material dimension in the determination of happiness: "while they are not enough to ensure the well-being of human beings (...) adequate material resources are nonetheless necessary." [Our translation] (Alber and Fahey 2004: 13). Actually, money is an essential prerequisite to the problem-solving process. In fact financial resources are directly linked to the improvement of access to other important resources such as social or leisure activities, social networks (traditional activities, mutual aid, membership in local associations, etc.), food, housing and physical safety, and consequently health. Conversely by reducing the autonomy of individuals as well as their capacity to reproduce their ancestral way of life, lack of money might provoke in the Inuit a feeling of despair and uselessness leading to the decline of their well-being. While the absence of material resources may lead to unhappiness, its presence is by no means a guarantee of happiness, at least this is what our data seems to confirm.²⁵ To quote Schuller: "money certainly doesn't buy happiness, but lack of money can be the cause of misfortune and destitution. Most of

²⁵ Myers and Diener (1995) made a similar observation.

the time, the economy only seems to affect happiness indirectly.” [Our translation] (Schuller 2002: 10).

Our results revealed also that the status on the job market affects the Inuit’s happiness more than the income. Our happiness equations clearly demonstrated that the social function of integration on the paid work market also applies perfectly to the Inuit. They tend to invalidate, at least among the Inuit, the common hypothesis of voluntary unemployment inspired by motivation theories. Therefore, it is not because they are completely satisfied with their situation that a large number of Inuit end up on unemployment. Underemployment is part of a set of social problems that are responsible for the high level of dissatisfaction within the Inuit community. In any case, that is what their intention of mobility seems to indicate. Let’s just recall that, according to the 2006 census data, 22 % of the Inuit population lived in a southern area.

Another observation that deserves our attention concerns the social representation that the Inuit make of themselves. In fact they are grappling with a dilemma. Just as the social demands for infrastructures and services formulated in their claims must be justified by highlighting the social problems and unfavourable conditions of their daily lives, these social representations adversely affect their feeling of happiness. Seeing themselves sick or projecting the image of a population that is sick, in distress, with problems of alcoholism, violence and suicide, has some pitfalls and negative consequences, especially on the Inuit’s personal happiness.

This fact appeals perhaps to a sense of caution in the broadcast of a new social representation of the Inuit: “sick people who must be treated”. In fact by medicalizing²⁶ the entirety of the Inuit’s life, we end up affecting their capacity to take care of themselves (autonomy), their social ties (the medical perspective that becomes the reference treats problems as individual problems), and their ordinary knowledge (predominance of expert knowledge). It is almost as if social life were limited for them to the implementation of a set of medical, psychiatric, pedagogical, and geriatric treatments.

Whatever we might say, with almost no due regards to the relative importance of the other predictors, our results corroborate one conclusion reached by the study of Kral (2003) in two Nunavut communities: family is an institution that is fundamental to the happiness of the Inuit. The strength of family ties and the solidarity of the extended family act as levers in the improvement of their feeling of happiness. There is nothing surprising about this, because the bases of the social ties among the Inuit have always been associated with the family as an institution.²⁷

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²⁶ This medicalization of the social context is applied in two ways: by the extension of medical jurisdiction, and by the administrative regulation of the social body through medicine and public health.

²⁷ Minor (1992) has in fact identified three forms of expression that have historically characterized social relationships among the Inuit: associations, kinship models, and dual relationships within the nuclear family. Several have described kinship as the backbone of the Inuit social organization (Bodenhorn 2000; Briggs 1994; Nuttal 2000, as quoted by Kral 2003). However, these kinship ties transcend blood ties and filial status.

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