

# Relative Income and Wellbeing in Canada

## Kanada'da Göreceli Gelir ve İyi Oluş

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### Abstract

This study examines the impact of relative income on wellbeing in Canada, drawing on data from the seventh round of the World Values Survey. The study evaluates the effects of relative income while controlling for various demographic, socioeconomic, and subjective factors. The covariates include age, low/middle education, and marital status, number of children, employment status, immigrant status, rural residence, religiosity, physical health, financial troubles, skepticism, and happiness levels. The findings indicate that relative income significantly influences wellbeing for both males and females, even after accounting for these factors. Gender-specific differentiations are seen, particularly in the influence of education, marital status, and employment. Further, the analysis incorporates an interaction term to examine whether the effect of relative income on wellbeing differs between emerging adults (ages 18-25) and mature adults (ages 26-45). The results indicate that the interaction term is not significant, suggesting that the impact of relative income on wellbeing remains consistent across these age cohorts. These results highlight the importance of relative income as a key determinant of wellbeing and suggest that policies aimed at reducing income inequality could enhance overall life satisfaction across diverse demographic groups.

**Keywords:** Relative Income, Wellbeing, Canada, Adults

### Öz

Bu çalışma, Kanada'daki görece gelirin refah üzerindeki etkisini, Dünya Değerler Araştırması'nın yedinci dalgasından elde edilen verileri kullanarak incelemektedir. Çalışma, çeşitli demografik, sosyoekonomik ve öznel faktörleri kontrol ederek göreceli gelirin etkilerini değerlendirmektedir. Kontrol değişkenleri yaş, düşük/orta eğitim seviyesi, medeni durum, çocuk sayısı, istihdam durumu, göçmenlik durumu, kırsal kesimde yaşama, dindarlık, fiziksel sağlık, finansal sıkıntılar, şüphecilik ve mutluluk seviyelerini içermektedir. Bulgular, görece gelirin hem erkekler hem de kadınlar için, bu faktörler dikkate alındıktan sonra bile refah üzerinde önemli bir etkiye sahip olduğunu göstermektedir. Cinsiyete özgü farklılıklar, özellikle eğitim, medeni durum ve istihdamın etkilerinde gözlenmiştir. Ayrıca analiz, göreceli gelirin refah üzerindeki etkisinin, genç yetişkinler (18-25 yaş) ve olgun yetişkinler (26-45 yaş) arasında farklılık gösterip göstermediğini incelemek için bir etkileşim terimini de içermektedir. Sonuçlar, etkileşim teriminin anlamlı olmadığını, yani göreceli gelirin refah üzerindeki etkisinin bu yaş grupları arasında tutarlı olduğunu göstermektedir. Bu sonuçlar, görece gelirin refahın ana belirleyicilerinden biri olduğunu vurgulamakta ve gelir eşitsizliğini azaltmayı amaçlayan politikaların, çeşitli demografik gruplar arasında genel yaşam memnuniyetini artırabileceğini önermektedir.

**Anahtar Kelimeler:** Göreceli Gelir, İyi Oluş, Kanada, Yetişkinler

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## 1. Introduction

Canada has undergone significant transformations in income distribution, demographic composition, and social mobility over recent decades as one of the world's most socioeconomically diverse nations (Helliwell and Putnam, 2004). Notably, income inequality in Canada has risen considerably, with the Gini coefficient indicating a 15 percent increase in inequality since 1981 (Marchand et al., 2020). Much of this growth, driven by rising incomes at the top of the distribution, occurred between the early 1990s and mid-2000s, during which the top 10 percent of earners captured 75 percent of total income gains, and the top 1 percent alone accounted for 37 percent of the growth (Lemieux and Riddell, 2016; Osberg, 2018). Depreciation in income inequality trend makes Canada an ideal context for examining how relative income affects individuals across different age groups and socioeconomic strata in a developed economy.

Additionally, Canada's high standard of living, coupled with its robust social welfare system, provides a unique setting to explore the nuances of income perception in a relatively affluent society. Unlike many studies focusing on cross-country comparisons or developing economies (Muhammad et al., 2021; Reyes-García et al., 2016; Ding et al., 2021; Alloush and Wu, 2023), I investigate Canada, a diverse and affluent nation with rising income inequality. The relationship between relative income and wellbeing in Canada remains an underexplored area in the literature. Furthermore, the study explores variations in the impact of relative income between emerging and mature adults—two demographic groups that may experience financial comparisons differently due to life stage, employment status, and societal expectations specific to that age group (Stephoe et al., 2015). This approach enhances our understanding of relative income's role in shaping wellbeing across diverse life trajectories. The findings also have significant implications for policymakers seeking to address income inequality and improve quality of life, both in Canada and in other high-income, multicultural societies.

The study of income and wellbeing traces back to Easterlin's seminal work in the 1970s, which proposed the Easterlin Paradox: the idea that higher income does not necessarily equate to greater happiness once basic needs are met (Easterlin, 1974). Subsequent research has both supported and challenged this notion, highlighting the complex and often non-linear relationship between income and wellbeing (Easterlin, 2001; Stevenson & Wolfers, 2008). While early studies predominantly examined absolute income levels as determinants of wellbeing, growing attention has shifted to the concept of relative income. According to Muffels (2024), relative income is defined as an individual's earnings relative to a reference point, which may either be their own past income (habituation) or the income of others at a specific point in time (social comparison).

Building on this idea, recent research has shifted its focus toward the psychological and social dimensions of income, emphasizing that perceptions of financial standing extend beyond material wealth to include subjective evaluations of one's relative position (Diener et al., 2018; Clark et al., 2008; Luttmer, 2005). Understanding these perceptions is essential, as they influence not only individual wellbeing but also broader societal cohesion.

Clark and Oswald (1996) found that higher relative income positively affects job satisfaction, a proxy for overall wellbeing. Luttmer (2005) demonstrated that an individual's happiness decreases when their neighbors earn more, underscoring the significance of relative income comparisons. Boyce, Brown, and Moore (2010) further demonstrated that one's income ranking within a peer group is a more accurate predictor of happiness than absolute income. Ferreri-Carbonell (2005) emphasized that individuals' satisfaction depends significantly on

their income relative to others in their social group, suggesting that relative deprivation plays a crucial role in determining wellbeing. Recent studies by Clark et al. (2018) and Stranges et al. (2021) have shown that the relative income effect persists across different cultural contexts, indicating its robustness as a determinant of wellbeing. Another study by Powdthavee et al. (2021) examined the role of relative income within households and showed that disparities in income significantly affect individual wellbeing. Ludwig et al. (2012) and Mishra et al. (2014) investigated the effects of relative income changes and concluded that upward mobility within social reference groups leads to higher wellbeing. Additionally, Steinberger and Kim (2023) explored the psychological mechanisms behind relative income effects, emphasizing the role of envy and social comparisons in shaping wellbeing.

Age is also an indicator of wellbeing. Blanchflower and Oswald (2008) highlighted the nonlinear correlation between age and wellbeing, with mid-life often representing a low point wellbeing, while both emerging and mature adults report higher levels of wellbeing. This U-shaped curve has been observed across various countries and cultures, suggesting a universal aspect of human psychological development. George (2010) noted that the correlation between age and wellbeing is affected by health status, social roles, and changes in personal goals. Recent studies by Stone et al. (2010) confirm this U-shaped pattern, showing that wellbeing dips during mid-life but improves in older age. In addition, Charles et al. (2023) and Steptoe et al. (2015) examined the impact of age on wellbeing throughout various phases of life, confirming the U-shaped curve and highlighting the significance of health and societal support in older age.

Education also influences wellbeing. Greater levels of education typically lead to enhanced job chances, higher income, and higher social status, all of which contribute to improved wellbeing (Oreopoulos & Salvanes, 2011). Moreover, education enhances cognitive skills and provides individuals with better tools to manage life challenges, thus fostering a higher sense of control and satisfaction (Mirowsky, 2017). A Powdthavee et al. (2015) highlight that education does not only affect economic outcomes but also has a significant impact on social and psychological wellbeing. Additionally, Côté et al. (2022) investigate the role of educational attainment in buffering the negative impacts of economic shocks on wellbeing.

Marital status is another significant determinant of wellbeing. Married individuals typically report greater wellbeing than those who are single or divorced (Nguyen et al., 2024). Married individuals benefit from emotional support, shared financial resources, and a sense of partnership, all of which contribute to higher wellbeing (Tambyah, et al., 2024). Diener et al. (2000) found that the quality of marital relationships is a critical factor in determining the extent of wellbeing derived from marriage. A study by Grover and Helliwell (2019) reaffirm the importance of marital quality over mere marital status in influencing wellbeing. Additionally, Chen et al. (2023) examine how changes in marital status (e.g., divorce or widowhood) impact life satisfaction, highlighting the significant transitional effects on wellbeing.

The impact of children on parental wellbeing is complicated. Some studies suggest that having children can increase life satisfaction through the fulfilment of parental aspirations and the joy of raising children (Nelson, Kushlev, & Lyubomirsky, 2014). However, other research indicates that the demands and stresses of parenting can negatively affect wellbeing, especially when coupled with financial strain and lack of social support (Kohler, Behrman, & Skytthe, 2005). The recent work by Glass et al. (2016) supports the view that the effects of children on wellbeing are contingent upon the availability of social and economic support. A study

by Gordon and Proulx (2023) highlights the differential effects of parenting on wellbeing, depending on the number of children and the gender.

Employment status significantly affects wellbeing, with unemployment being strongly associated with lower life satisfaction and higher levels of psychological distress (Clark & Oswald, 1994). Employment provides not only financial stability but also a sense of purpose and social interaction, which are crucial for psychological wellbeing. Conversely, the loss of employment can lead to financial insecurity, social isolation, and a reduced sense of self-respect. The findings of Helliwell and Huang (2014) emphasize the profound impact of job loss on life satisfaction and the importance of stable employment. Recent research by Gedikli et al. (2023) and Lawes et al. (2023) explore the effects of job loss and unemployment on mental health and overall health, highlighting the enduring negative impacts on wellbeing.

Immigrant status can influence wellbeing through various channels, including social integration, economic opportunities, and access to services. Studies have shown that immigrants often face challenges such as cultural adaptation, discrimination, and language barriers, which can negatively impact their wellbeing (Berry, 1997). However, successful integration into the host society can mitigate these effects and lead to improved life satisfaction (DeVoretz & Pivnenko, 2005). Safi (2010) indicates that the degree of social and economic integration is essential for moderating the wellbeing of immigrants. Additionally, Yu et al. (2023) and Novara et al. (2023) investigate the impact of social networks on immigrant wellbeing, emphasizing the importance of community support on wellbeing.

The impact of rural versus urban residence on wellbeing is nuanced. Urban areas often provide better access to services, educational and employment opportunities, and social activities, contributing to higher life satisfaction (Glaeser, 2011). However, rural areas may offer a higher quality of life through lower living costs, less pollution, and a stronger sense of community (Berry & Okulicz-Kozaryn, 2011). The relative benefits of rural versus urban living can vary based on individual preferences and circumstances. Recent studies by Shucksmith et al. (2019) have documented the complex trade-offs between urban amenities and rural tranquility in determining life satisfaction. A study by Ajaero et al. (2023) investigates the impact of rural-urban migration on wellbeing, emphasizing the importance of maintaining social ties and community engagement.

Religiosity has been found to positively correlate with wellbeing. Diener et al. (2011) noted that individuals with strong religious beliefs often report higher life satisfaction, possibly due to the community support and existential comfort provided by religious engagement. Religiosity can offer coping mechanisms during times of stress and foster a sense of direction and fulfillment in life (Koenig, 2001). A study by Stavrova et al. (2013) suggests that the positive impacts of religiosity on wellbeing are mainly noticeable in religious societies. Furthermore, Crowley (2024) and Zuhdiyah et al. (2023) examine the role of religious diversity and tolerance in enhancing community wellbeing. They found that the greater the tolerance the higher the wellbeing.

Self-reported physical health is also an important predictor of overall wellbeing. Poor health can significantly diminish an individual's life quality, overshadowing the benefits of higher income (Deaton, 2008). The perception of one's health status can influence daily activities, social interactions, and future expectations, thereby impacting overall wellbeing. A study by Diener and Chan (2011) reinforces the critical role of physical health in determining wellbeing across different populations. Additionally, Holt-Lunstad et al. (2021) examine how

social relationships influence the impact of physical health on wellbeing, highlighting the importance of social support networks.

Additionally, financial trouble is a significant source of stress and can severely impact wellbeing. Studies have shown that financial instability leads to anxiety, depression, and lower life satisfaction (Taylor et al., 2011). A paper by Carlander et al. (2023) and Shimonovich et al. (2024) underscore the pervasive effects of income inequality on health and wellbeing.

Also, skepticism, or a general distrust in others and institutions, can negatively affect wellbeing. Individuals with high levels of skepticism may experience lower social support, increased stress, and diminished trust in societal systems, all of which contribute to lower life satisfaction (Putnam, 2000). The findings of Helliwell and Putnam (2004) indicate that social trust and community engagement are crucial determinants of wellbeing.

The relationship between happiness and wellbeing is well-documented, with higher levels of happiness consistently associated with greater wellbeing (Diener and Sim, 2024). Diener et al. (2018) emphasized that wellbeing includes both pleasure-based and purpose-based dimensions. The pleasure-based dimension of wellbeing comes from happiness and therefore enhances overall wellbeing, as supported by recent studies by Layard et al. (2020) and Graham and Nikolova (2022).

The findings of this study reveal that relative income significantly predicts wellbeing, with higher perceived relative income associated with greater wellbeing for both males and females. When additional demographic and socioeconomic covariates are included, relative income remains significant, although the effect size diminishes slightly. Also, factors such as age, education, marital status, and employment status also play crucial roles in influencing wellbeing. The results further indicate that the interaction between relative income and age groups does not significantly affect wellbeing, suggesting a consistent impact of relative income across different age cohorts.

The next section presents the data, providing an overview of the dataset used in the study. This is followed by the method section, which outlines the analytical techniques employed. The results section then highlights the key findings. Finally, the conclusion and discussion section summarizes the findings, explores their implications, and suggests directions for future research.

## **2. Data and methodology**

### **2.1. Data**

The dataset employed in this study is derived from the seventh wave of the World Values Survey (WVS). It is a globally recognized research program initiated in 1981. The WVS, conducted in nearly 100 countries, captures the values, attitudes, and perceptions of individuals. It also analyses their implications for social, political, and economic phenomena. The Canadian sample, collected in 2020, is nationally representative, ensuring coverage of diverse demographic and socioeconomic groups. The survey employs random sampling techniques and standardized questionnaires administered in multiple languages to mitigate comprehension barriers and enhance reliability. The methodological rigor of the WVS minimizes biases related to survey design and data collection, establishing the data as a robust foundation for empirical analysis.

The seventh wave was selected due to its contemporaneity and its inclusion of variables essential to this study, specifically self-reported wellbeing and perceived relative income. Earlier waves of the WVS lack comparable measures for one or both of these variables within the



Canadian sample, rendering them unsuitable for the study’s objectives. By utilizing the seventh wave, this study ensures an accurate and current examination of the relationship between relative income and wellbeing in Canada, with attention to heterogeneity across emerging adults (ages 18-25) and mature adults (ages 26-45).

The dependent variable, wellbeing, is measured on a self-reported scale from 1 to 10. For females, the mean wellbeing score is 6.6, while for males, the mean score is 6.7. Relative income is the primary independent variable, measured on a scale from 1 to 10. The mean relative income score for females is 5.2, and for males, it is 5.6. The respondents’ age ranges from 18 to 45 years. The mean age for females is around 31, and for males, it is around 32. The variable for low/middle education is binary, coded as 1 for respondents with foundational, elementary, junior high, high school, or post-high school or non-tertiary education, and 0 otherwise. For females, 61.3% are classified as having low/middle education, compared to 57.7% of males. Single is a binary variable coded as 1 if the respondent is single and 0 for other marital statuses. Among the respondents, 45.6% of females and 42.1% of males are single. The number of children is a numeric variable indicating the count of dependent children living in the household. The mean number of children for females is 0.741, and for males, it is 0.732. Unemployed is a binary variable coded as 1 if the respondent is unemployed and 0 otherwise. The proportion of unemployed females is 37.8%, while for males, it is 26.9%. Immigrant status is a binary variable coded as 1 if the respondent is an immigrant to Canada and 0 otherwise. The proportion of immigrant females is 16.4%, and for males, it is 21.1%. Rural is a binary variable, assigned a value of 1 if the individual resides in a rural area and 0 if they do not. Among the respondents, 23.8% of females and 16.1% of males live in rural areas.

**Table 1. Descriptive Statistics**

Variables	Female				Male			
	Obs	Mean	Min	Max	Obs	Mean	Min	Max
<b>Wellbeing</b>	1084	6.620	1	10	929	6.728	1	10
<b>Relative income</b>	1084	5.175	1	10	929	5.586	1	10
<b>Age</b>	1084	30.94	18	45	929	32.219	18	45
<b>Low education</b>	1078	0.613	0	1	926	0.577	0	1
<b>Single</b>	1084	0.456	0	1	929	0.421	0	1
<b>Number of children</b>	1084	0.741	0	4	929	0.732	0	4
<b>Unemployed</b>	1084	0.378	0	1	929	0.269	0	1
<b>Immigrant</b>	1084	0.164	0	1	929	0.211	0	1
<b>Rural</b>	1084	0.238	0	1	929	0.161	0	1
<b>low religiosity</b>	1084	0.461	0	1	929	0.441	0	1
<b>High religiosity</b>	1084	0.316	0	1	929	0.332	0	1
<b>Poor self-reported physical health</b>	1084	0.346	0	1	929	0.269	0	1
<b>Financial trouble index</b>	1084	0.041	-1.572	4.359	929	0.460	-1.572	5.412
<b>Scepticism index</b>	1084	0.472	0	1	929	0.429	0	1
<b>Not very happy</b>	1084	0.153	0	1	929	0.146	0	1
<b>Quite happy</b>	1084	0.694	0	1	929	0.618	0	1
<b>Very happy</b>	1084	0.132	0	1	929	0.201	0	1

Low religiosity and high religiosity are binary variables with the reference category being non-believers (atheists). Low religiosity is coded as 1 if the respondent reports low levels

of religiosity and 0 otherwise. High religiosity is coded as 1 if the respondent reports high levels of religiosity and 0 otherwise. The proportion of females with low religiosity is 46.1%, and for males, it is 44.1%. High religiosity is reported by 31.6% of females and 33.2% of males. Poor self-reported physical health is a binary variable coded as 1 if the respondent reports poor, very poor, or moderate physical health, and 0 if they report good or very good health. The proportion of females reporting poor health is 34.6%, while for males, it is 26.9%. The financial trouble index is constructed using factor analysis from five different variables related to financial difficulties: access to food, healthcare, housing, housing quality, and clothing needs. The mean index for females is 0.041, while for males, it is 0.460. The scepticism index is constructed from multiple questions in the World Values Survey related to scepticism. The mean index for females is 0.472, and for males, it is 0.429. Finally, the happiness variable is categorized into four levels: unhappy (reference category), not very happy, quite happy, and very happy. The proportion of not very happy females is 15.3%, and for males, it is 14.6%. Quite happy females constitute 69.4% of the sample, while for males, it is 61.8%. Very happy females make up 13.2%, compared to 20.1% of males.

The indices for financial trouble and scepticism are constructed using the methodologies provided by the World Values Survey, ensuring consistency with their established frameworks. In cases where variables had low observation counts, categories with limited observations were either integrated into adjacent categories or recoded as binary dummy variables to preserve analytical validity and mitigate issues arising from sparse data. These adjustments were made to maintain the robustness and interpretability of the statistical analysis while adhering to standard practices in empirical research.

## 2.2. Methodology

This study uses data from a Canadian sample of the latest wave of the World Value Survey. The sample includes individuals aged 18-45 years, comprising both emerging adults (ages 18-25) and mature adults (ages 26-45). The focus is to investigate the impact of relative income on wellbeing, with additional demographic, socioeconomic, and subjective self-reported variables included as covariates.

Wellbeing is the dependent variable, measured on a self-reported scale from 1 to 10. While this scale is technically ordinal, it is treated as continuous in this study, consistent with the approach adopted in similar research (Arpino and de Valk, 2018; Hendriks and Burger, 2020; Stranges et al., 2021). These studies argue that treating such scales as continuous is appropriate due to their large range, which approximates interval properties, and the practical advantages it offers. Specifically, this approach avoids the challenges associated with ordinal logistic regression, which can be less reliable when category sizes are imbalanced or observation counts are low. Furthermore, dichotomizing the variable for probit or logit regression would lead to a significant loss of information. Thus, following the precedent set in the literature, this study employs Ordinary Least Squares (OLS) regression to analyze wellbeing, ensuring methodological consistency and robust estimation.

The main independent variable is relative income. Other covariates include age, age squared, low/middle education, single status, number of children, unemployed status, immigrant status, rural residence, low religiosity, high religiosity, poor self-reported physical health, financial trouble index, skepticism index, not very happy, quite happy, and very happy. An interaction term between relative income and a variable “adults” (coded zero for emerging adults and one for mature adults) is also included. The selection of covariates is guided by

established findings in the literature and the availability of relevant variables in the dataset. As detailed in the introduction and literature review, these variables are frequently identified as key determinants of wellbeing in prior studies. While additional covariates could theoretically enhance the analysis, the dataset is limited to the variables available in the World Values Survey. Importantly, the selected variables are those most relevant to the research question and supported by the literature, ensuring a robust and meaningful exploration of the determinants of wellbeing.

Ordinary Least Squares (OLS) estimation is employed to obtain parameter estimates, a method widely used in empirical research due to its efficiency and simplicity under the classical linear regression assumptions (Wooldridge, 2010). OLS minimizes the sum of the squared residuals, providing the Best Linear Unbiased Estimators (BLUE) under the Gauss-Markov theorem when the assumptions of linearity, independence, homoscedasticity, and normality of errors are met (Greene, 2012). Clustered standard errors are used to account for potential intra-cluster correlation within the sample, addressing heteroscedasticity and within-cluster dependence (Cameron and Miller, 2015). This adjustment ensures more reliable inference by correcting standard errors in the presence of correlated observations, which is common in survey data.

The models are specified and estimated as follows:

For Table 2, the model is specified as:

$$Y_i = \alpha + \beta_1(\text{relative income}) + \beta_2(\text{age}) + \beta_3(\text{age squared}) + \beta_4(\text{low education}) \\ + \beta_5(\text{single}) + \beta_6(\text{number of children}) + \beta_7(\text{unemployed}) \\ + \beta_8(\text{immigrant}) + \beta_9(\text{rural}) + \beta_{10}(\text{low religiosity}) \\ + \beta_{11}(\text{high religiosity}) + \beta_{12}(\text{poor physical health}) \\ + \beta_{13}(\text{financial trouble index}) + \beta_{14}(\text{skepticism index}) \\ + \beta_{15}(\text{not very happy}) + \beta_{16}(\text{quite happy}) + \beta_{17}(\text{very happy}) + \epsilon_i$$

For Table 3, the model is specified as:

$$Y_i = \alpha + \beta_1(\text{relative income}) + \beta_2(\text{adults}) + \beta_3(\text{relative income} \times \text{adults}) \\ + \beta_6(\text{low education}) + \beta_7(\text{single}) + \beta_8(\text{number of children}) \\ + \beta_9(\text{unemployed}) + \beta_{10}(\text{immigrant}) + \beta_{11}(\text{rural}) \\ + \beta_{12}(\text{low religiosity}) + \beta_{13}(\text{high religiosity}) \\ + \beta_{14}(\text{poor physical health}) + \beta_{15}(\text{financial trouble index}) \\ + \beta_{16}(\text{skepticism index}) + \beta_{17}(\text{not very happy}) + \beta_{18}(\text{quite happy}) \\ + \beta_{19}(\text{very happy}) + \epsilon_i$$



### 3. Results

Table 2. The Impact of Relative Income on Wellbeing in Canada

VARIABLES	Male	Female	Male	Female	Male	Female
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Relative income	0.458*** (0.050)	0.395*** (0.044)	0.411*** (0.063)	0.342*** (0.040)	0.237*** (0.044)	0.133*** (0.024)
Age			-0.017 (0.011)	-0.034** (0.015)	0.002 (0.007)	-0.017 (0.010)
Age square			-0.002** (0.001)	0.000 (0.002)	-0.002 (0.001)	-0.001 (0.001)
Low education			0.162 (0.143)	-0.260*** (0.069)	0.074 (0.096)	-0.037 (0.070)
Single			-0.587*** (0.117)	-0.451*** (0.121)	-0.247 (0.140)	-0.169* (0.078)
Number of children			0.072 (0.094)	0.325*** (0.091)	0.005 (0.099)	0.144** (0.056)
Unemployed			-0.379** (0.145)	-0.413 (0.236)	0.102 (0.155)	-0.310 (0.187)
Immigrant			0.631** (0.249)	-0.072 (0.064)	0.302 (0.248)	-0.118 (0.076)
Rural			0.163 (0.126)	0.149 (0.096)	-0.047 (0.137)	0.078 (0.121)
Low level of religiosity					0.039 (0.113)	0.121 (0.075)
High level of religiosity					0.343** (0.146)	0.286** (0.089)
Poor self-reported physical health					-0.566*** (0.097)	-0.640*** (0.091)
Financial trouble index					-0.167*** (0.030)	-0.074 (0.084)
Scepticism index					-0.549** (0.191)	-0.824*** (0.124)
Not very happy					1.253*** (0.369)	1.314** (0.463)
Quite happy					2.805*** (0.570)	3.051*** (0.302)
Very happy					3.649*** (0.436)	4.308*** (0.322)
Constant	4.172*** (0.355)	4.574*** (0.311)	4.586*** (0.495)	5.054*** (0.310)	3.172*** (0.656)	3.651*** (0.428)
observations	929	1,084	926	1,078	926	1,078
r-squared	0.206	0.134	0.261	0.201	0.508	0.517

Clustered standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The first two models, which include only relative income, show an important positive influence on wellbeing for both males and females. When demographic and socioeconomic covariates (age, age squared, low/middle education, single, number of children, unemployed, immigrant, and rural) are added in Models 3 and 4, relative income remains significant for both genders, although the coefficients decrease slightly.

In these expanded models, age and age squared become significant for females, indicating a non-linear relationship between age and wellbeing. Low/middle education is negatively significant for females but not for males. Being single reduces wellbeing for both genders, with

a stronger effect for males. The number of children indicates a positive and significant impact on wellbeing for females but is not significant for males. Unemployment negatively impacts wellbeing for males but is not significant for females. Being an immigrant has a favourable and substantial impact for males but is not significant for females. The rural variable shows an insignificant effect in any model.

When subjective self-reported measures (low level of religiosity, high level of religiosity, poor self-reported physical health, and financial trouble index, scepticism index, not very happy, quite happy, and very happy) are added in Models 5 and 6, relative income continues to be significant for both genders, though the coefficients further decrease. High levels of religiosity positively and significantly affect wellbeing for both males and females. Poor self-reported physical health significantly reduces wellbeing for both genders. The financial trouble index negatively impacts wellbeing for males but is not significant for females. The scepticism index reduces wellbeing for both genders. Happiness levels strongly positively affect wellbeing, with higher happiness levels leading to higher wellbeing. Adding these additional subjective response covariates causes some variables from the first group of covariates to become insignificant. For instance, unemployment, which was significant for males in the earlier models, becomes insignificant in Model 5. Similarly, the effect of being single, although still negative, becomes less significant for both genders.

The constant term is positive and significant in all models, representing the baseline level of wellbeing. R-squared values increase with the addition of more variables, indicating the models' improved explanatory power. Models 5 and 6 have higher R-squared values compared to the earlier models, suggesting that a greater proportion of the variance in wellbeing is explained by the included variables. The primary conclusion is that the main independent variable, relative income, remains significant irrespective of the additional variables included in the models. This highlights the strong influence of relative income on wellbeing across various demographic, socioeconomic, and subjective contexts.

### ***Interaction Effects of Relative Income and Age Groups on Wellbeing***

This part shows the findings of an interaction model examining the impact of relative income on wellbeing, with a specific focus on different age groups. The variable “adults” is coded as zero for emerging adults (ages 18-25) and one for mature adults (ages 26-45). This variable is interacted with the relative income variable. The model includes all other covariates, as well as the main variables of relative income and adults.

**Table 3. Interaction Effects of Relative Income and Age Groups on Wellbeing**

<b>VARIABLES</b>	<b>Male</b>	<b>Female</b>
<b>Adults * Relative income</b>	0.154 (0.118)	-0.058 (0.077)
<b>Constant</b>	3.665*** (0.507)	3.535*** (0.417)
<b>Observations</b>	926	1,078
<b>R-squared</b>	0.510	0.514

The interaction coefficient between relative income and the “adults” variable is not statistically significant for either males or females. The findings indicate that the wellbeing

effect of relative income does not significantly differ between emerging adults (ages 18-25) and mature adults (ages 26-45). These results indicate that while relative income remains an important determinant of wellbeing, its effect does not significantly vary between the different age cohorts in this sample. The inclusion of the interaction term and other covariates helps to account for the understanding correlation between relative income, age, and wellbeing.

#### 4. Conclusion and Discussion

This study investigates the impact of relative income on wellbeing in Canada, analyzing data separately for males and females. The analysis reveals that relative income is a vital factor of wellbeing, with higher perceived relative income associated with greater wellbeing for both genders. This relationship persists even after accounting for different demographic, socioeconomic, and subjective factors, although the effect size diminishes slightly with the inclusion of additional covariates.

The findings indicate that age and its squared term are significant for females, suggesting a non-linear relationship between age and wellbeing. Education, marital status, number of children, employment status, and immigrant status also play crucial roles in influencing wellbeing, with notable gender differences. For instance, low/middle education negatively affects wellbeing for females, while being single shows a stronger adverse effect on males. The results also underscore the importance of subjective self-reported measures, such as religiosity, physical health, financial troubles, skepticism, and happiness levels, in determining wellbeing. The interaction analysis reveals that the interaction term between relative income and age groups is insignificant, indicating that the impact of relative income on wellbeing does not vary meaningfully between emerging adults (ages 18-25) and mature adults (ages 26-45).

Overall, the results contribute to the previous studies on the link between relative income and wellbeing. Also, the persistent significance of relative income across various models highlights its robust role as a determinant of wellbeing. This result aligns with the findings of previous studies, such as Clark et al. (2008) and Luttmer (2005), which emphasize the critical role of perceived relative income in understanding wellbeing. Similarly, Kraft and Kraft (2023) highlight the influence of social comparison on the relationship between income and happiness, supporting the notion that perceptions of relative income to others play a significant role. The results of this study are also consistent with Jebb et al. (2021) and Thomson et al. (2022), who demonstrate that changes in relative income can significantly affect mental health and overall wellbeing. Lastly, the statistically insignificant interaction between relative income and age groups demonstrates that the effect of relative income on wellbeing remains consistent across emerging adults (ages 18-25) and mature adults (ages 26-45). This finding is consistent with the work of Frijters et al. (2023), which highlights the psychological mechanisms underlying relative income effects, particularly the role of social comparisons, and supports the generalizability of these dynamics across age cohorts.

To enhance wellbeing in Canada, policies should address both economic and social determinants identified in the analysis. The consistent and strong association between relative income and wellbeing underscores the need for initiatives that reduce income inequality and improve perceptions of financial standing. Policies such as progressive taxation, wage increases for low-income workers, and targeted financial assistance programs can help narrow the relative income gap and enhance wellbeing. Additionally, public campaigns to foster a better understanding of financial stability and reduce the psychological effects of income comparisons could further support individuals. The results highlight gender-specific dynamics. For females,

the significant negative impact of low education suggests the importance of investing in educational opportunities, particularly for women. Scholarships, vocational training, and skill-development programs could enhance wellbeing by improving educational attainment and subsequent economic opportunities. For males, the pronounced adverse effect of being single on wellbeing indicates a need for community-building initiatives and mental health support to reduce social isolation. The significant effects of poor physical health and financial troubles on wellbeing call for targeted public health measures and expanded social support systems. Policies that improve access to affordable healthcare, offer financial counselling, and address basic needs such as housing and childcare can alleviate these stressors. Additionally, promoting mental health through public awareness campaigns, workplace mental health programs, and accessible psychological services can further contribute to overall wellbeing. Lastly, addressing these determinants with an emphasis on income stability and economic security ensures that policies benefit both males and females across different demographic groups.

#### **Contribution Rate Statement**

As the sole author of the study, I have contributed fully to all stages, from the initial writing to the final draft.

#### **Conflict of Interest Statement**

There is no conflict of interest involving any institution or individual in relation to this study.

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