

Does Income Inequality Impact Individual Happiness? Evidence from Canada

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Abstract: Using panel data from the Canadian National Population Health Survey (1994-2009), this study examined the impact of income equality measured by the Gini coefficient on individual happiness. The results from the ordered probit method and the individual fixed effects method suggest that the contemporaneous Gini coefficient has a significant negative impact on individual happiness. To check the robustness of these results, the study utilized a number of measures of income inequality, including the decile ratio, coefficient of variation, log mean deviation, and Theil index. All of the measures show that contemporaneous income inequality has a significant negative effect on individual happiness. The study also finds that lagged income inequalities have a negative, but insignificant impact on individual happiness.

Keywords: Happiness; Income Inequality; Canada.

JEL Classifications: I31; D31

1. Introduction

Income inequality in Canada has been on rise over the past 20 years. An estimation using data from Statistics Canada shows that the Gini index, based on after-tax income, has increased from 0.28 in 1989 to 0.32 in 2009 (Conference Board of Canada, 2011). Estimates also show that between 1976 and 2009, the wealthiest quintile of the population experienced an average 27.5% increase, while the remaining four quintiles saw an average 7.9% decline in real market income (Action Canada Task Force, 2012). Over the last 10 years, the majority of OECD countries have seen an increase in income inequality; however, OECD data on comparative income inequality suggests that income inequality increased more rapidly in Canada than in most other OECD countries, including the United States (OECD, 2011). Recently, Canadian academics and policymakers initiated a discussion on the possible causes and potential consequences of rising income inequality (Fortin et al., 2012; Parliament of Canada, 2013). An issue that received less attention so far is the possible impact of income inequality on the happiness of Canadian people. The objective of this paper is to examine this issue using Canadian data.

A significant number of studies examined relationship between income and happiness (Easterlin, 1996, 2001, 2006; Becchetti, & Rossetti, 2009; Clark et al. 2006). However, relatively few studies have focused on the impact of income inequality on individual happiness. In early studies, Leyden Group considered 'Welfare Function of Income' in which individuals were asked to assign income levels (per period) to different verbal labels (such as 'Excellent', 'Good', 'Sufficient' and 'Bad'). The answers were then used to estimate an individual log normal

'Welfare Function of Income'. These individual based welfare functions were utilized to explain which types of individuals required a higher level of income to be satisfied, and which individuals have valuations that were more sensitive to changes in income (Van Praag and Frijters, 1999; Clark et al. 2008). In their study, Hagenars & Praag (1985) found a positive effect of increasing income inequality on perception of poverty (or lack of well-being) in a country. Tachibanaki and Sakoda (2016) used the data from five industrialized countries to examine the effect of inequality on feeling of happiness and found that the sign of the effect differed by country. Ballas et al. (2016) concluded that income inequality at the national level could be seen as a proxy to the psycho-social well-being of whole populations. In recent times, a number of studies, using Gini Coefficient as a measure of income inequality, examined the relationship between income inequality and individual happiness. In a seminal study, Alesina et al. (2004) used individual-level data from the United States (1981-1996) and 12 European countries (1979-1992) to examine the effect of inequality in society on individual well-being. After controlling for personal characteristics of the respondents, state/country effects and year effects, the study finds that income inequality reduces subjective well-being amongst Europeans, but not Americans. Helliwell (2003) used data from the World Values Survey (Waves 1-3) to examine factors influencing subjective well-being and the study finds the Gini Coefficient has no significant impact on subjective well-being. Using data from the German Socio-Economic Panel Study (1985-1999), Schwarze and Härpfer (2007) find that income inequality has a significant negative effect on life satisfaction. Sanfey and Teksoz (2007) used data from the World Values Survey to analyze life satisfaction in transition countries. They find that satisfaction levels are highest in those countries where standards of economic governance are most advanced and where inequality is lower. Using cross country data from the World Values Survey (1997-2000), Bjørnskov et al. (2008) find no significant relationship between Gini and individual subjective well-being. Using data from the Chinese National Household Survey, Knight et al. (2009) finds that income inequality, measured by the Gini coefficient, has a positive impact on happiness. In a recent paper, using micro level data from two nationwide surveys in Japan, Oshio and Kobayashi (2011) examined the relationship between area level inequality measured by the Gini Coefficient' and an individual's assessment of happiness. The results from the logit models show that individuals who live in areas of high income inequality are less happy, even after controlling for various individual and area level factors. In another recent study, Rözer, J., & Kraaykamp (2013) used cross country data from the World Values Survey and European Values Survey and they find that people living in more unequal countries report higher well-being than people from more equal countries.

A number of studies used reference group income as a measure of inequality to examine relationship between happiness and income inequality. Using data from the first eleven waves of the British Household Panel Survey (BHPS), Clark (2003) examined the impact of the distribution of reference group income on individual well-being. His results suggest that income inequality is positively correlated with measures of subjective well-being. Using individual-level data from a large number of European countries and the United States, Senik (2008) examines how self-reported subjective well-being depends on own income and reference group income. The results show that average income in one's professional group negatively affects individual subjective well-being in 'old' European countries, whereas the correlation is positive in post-transition economies and the United States. Luttmer (2005) used data from the US National Survey of Families and Households (1987-1988 and 1992-1994) to empirically examine the

relationship between relative position and self-reported happiness. This study finds that individuals' self-reported happiness is negatively affected by the earnings of others in their area. Using data from the German Socio-Economic Panel (1992-1997), Ferrer-i-Carbonell (2005) examined the influence of the income of a reference group on individual well-being. The results suggest that reference group income has a negative impact on individual's happiness.

So far, only two studies have used Canadian data to examine the relationship between income inequality and happiness (Tomes, 1986). Using cross-sectional data from the 1977 Quality of Life Survey, this study shows that income inequality is positively correlated with happiness for men whereas the relationship is not significant for women. In this study, the author used share of income received by the bottom 40% as a measure of income inequality. Barrington-Leigh and Helliwell (2008) used three Canada-wide social surveys and the 2001 census to examine the relationship between well-being and income spillovers for different geographic scales. The study finds that the overall spillover effect is negative.

In sum, there is no conclusive evidence regarding the impact of income inequality on happiness: some studies show positive impact, some find no impact and other studies find negative impact of income inequality on happiness. Thus it is necessary to conduct further study to examine this important relationship. The present study aims to make the following contribution to the literature:

- i. Unlike most other existing studies, this study uses the 'Gini Coefficient' as well as other measures of income inequality, including the Decile Ratio (90P/10P), Coefficient of Variation, Log Mean Deviation and Theil Index.
- ii. So far, all of the studies examining the impact of contemporaneous income inequality on happiness have overlooked the possibility that lagged income inequalities may influence happiness. This study includes lagged income inequalities as covariates in the happiness model.
- iii. To the best of the knowledge of this author, this will be the first Canadian study to use 'Gini Coefficient' as a measure of income inequality. This will help comparing Canadian result with other studies using 'Gini Coefficient'.

This study is structured as follows: Section 2 discusses theoretical framework; Section 3 discusses methodology; Section 4 presents the results; and Section 5 offers summary and conclusion.

2. Theoretical Framework

Conceptually, there is no consensus on the impact of income inequality on individuals' happiness. Theories suggest that inequality may impact individuals' happiness in a positive or negative way. A number of explanations are provided to suggest why people may dislike income inequality: first, individuals may be concerned that an increase in income inequality will lead to riskier outcomes rather than greater opportunities, and worry that increased income inequality will erode their current economic/financial conditions (Giuliano & Spilimbergo, 2009); second, individuals may have genuine concerns about the welfare of others in the society, and these people tend to be happier in a more equal society (Dawes et al., 2007); third, some individuals dislike inequality because they think that inequality breeds crime and threatens property rights

(Alesina et al., 2004). Sociology literature points to the negative impact of income inequality on number determinants of happiness such as social cohesion, equality, fairness and group identity (Oshio and Kobayashi, 2011).

Hirschman and Rothschild (1973) suggest that rising income inequality may have a positive impact on an individual's happiness if s/he interprets this as indicator of her/his better future prospect. To illustrate this conjecture, known as 'tunnel effect', Hirschman and Rothschild (1973) provided an example of several lanes of traffic stuck in a tunnel. When traffic in one lane starts to move, drivers in other lanes take this signal as an indication that jam has ended. They feel happier because of the expectation that they will also be able to move soon. In the similar sense, rapid growth of income of a certain segment of the population may generate expectation among the rest of population that they will also be able to attain higher incomes in the near future.

3. Methodology

3.1. Data

To examine the impact of income inequality on happiness, this study used panel data from the Canadian National Population Health Survey (NPHS) covering a period from 1994 to 2009. The NPHS collects data related to the health, health care utilization and socio-demographic profiles of the Canadian population. This survey has three components: the Households, the Health Institutions, and the North components. This study focused on the household component of the survey. The household component of the NPHS started in 1994/95 and is conducted every two years. This component includes data collected from household residents in the ten Canadian provinces in 1994/1995, excluding persons living on Indian Reserves and Crown Lands, residents of health institutions, full-time members of the Canadian Forces Bases and some remote areas in Ontario and Quebec. The present study restricts the sample to individuals aged 16 to 64, yielding 43,771 person-wave observations.

The dependent variable of this study is individual happiness, which includes the following ordinal categories: 1) so unhappy in life, 2) very unhappy, 3) somewhat unhappy, 4) somewhat happy, and 5) happy in life.¹

The study utilized a number of measures of income inequality: Gini coefficient, decile ratio (90P/10P), coefficient of variation, mean log deviation, and Theil index. The Gini coefficient is derived from a Lorenz curve that shows the percentage of total income earned by the cumulative percentage of the population. Gini coefficient is the most common measure of income inequality and has been extensively used in income inequality literature (Atkinson, 1983). However, Gini coefficient has a number of limitations. A major limitation of the Gini Coefficient is that this

¹ Cummins & Gullone (2000) suggested that 5 point Likert scale is not sufficiently sensitive for the purpose of using subjective quality of life (SQOL) as a measure of outcome. They argued that expanding number of choice points beyond 5 or 7 would not decrease scale reliability, but would increase scale sensitivity by allowing respondents to provide more precise answers.

measure cannot differentiate among different kinds of income inequalities (Cowell, 1995). Gini coefficient is also most sensitive to inequalities in the middle part of income distribution (Hey and Lambert, 1980). The decile ratio is estimated by taking the income earned by the top 10% of households and then dividing that figure by the income earned by the poorest 10% of households. Though the decile ratio is a simple way to measure income inequality, but it ignores the inequalities in the middle part of income distribution. The coefficient of variation of any income distribution is estimated by dividing the standard deviation of income distribution by its mean. A major limitation the coefficient of variation is that this measure has no upper limit and consequently it is difficult to interpret and compare the results (Campano and Salvatore, 2006). The Theil index and the Mean Logarithmic Deviation are special cases of the Generalized Entropy index. These indices measure an entropic distance that separates the population from the ideal egalitarian state in which everyone has the same income. The Generalized Entropy index incorporates a sensitivity parameter (α) that varies in the weight given to inequalities in the different parts of the income distribution. The more positive α is, the more sensitive the GE (α) is to inequalities at the top of income distribution (De Maio, 2007). The Theil index is equivalent to the GE(2) while the Mean Log Deviation is equivalent to the GE(0) measures.

The model included other covariates such as gender, age, marital status, education, homeownership, location of residence, household income, health status, number of children, number of household members, and provinces.

The independent variable of gender is represented by a dummy variable with male as the base category. 'Age' is included as a continuous variable; and to capture the possible non-linear impact of age, the model also included another variable – 'Squared Age'. The variable 'Marital Status' has three categories: single, married, and widow/separated/divorced. Here, the base category is 'single'. Individual's level of education is measured by the variable 'Education Status', which has four categories: less than secondary, secondary graduate, some post-secondary education, and college/university education. The base category is 'less than secondary'. The variable 'Health Status' has the following categories: poor health, fair health, good health, very good health, and excellent health. The base category is 'Poor Health'. The dummy variable 'having own home' indicates whether or not an individual owned a home. The covariate 'Household income' is a continuous variable indicating the total income earned by the members in a household. Following the other studies in the economics of happiness, this study uses logarithmic version of household income.

3.2. Empirical Framework

The econometric framework is based on following two models:

$$HAP_{it} = \alpha + X_{it}\beta_x + \beta E_{jt} + \delta_j + \lambda t + \varepsilon_{it} \quad (1)$$

$$HAP_{it} = \alpha + X_{it}\beta_x + \beta E_{jt} + \sum_{k=1}^4 \beta_k E_{jt-k} + \delta_j + \lambda t + \varepsilon_{it} \quad (2)$$

where HAP_{it} represents the happiness level of individual i in year t . X is a vector of observable individual-specific explanatory variables, such as gender, age, marital status, education, housing

wealth, health, employment status, number of children, number of household members and income; E_{jt} is the province specific measure of income inequality in province j in year t ; $E_{jt-1} \dots E_{jt-4}$ represent lagged income inequality²; and ε is the error term. The model includes provincial dummies (δ_j) to take into account for the unobserved determinants of happiness that differ across locations but are time-invariant, such as different types of natural beauty and weather. To take into account the yearly changes that are the same for all individuals, such as inflation rate, the models include year dummies (λt). Further, the model also includes other province specific variables such as provincial GDP growth, provincial unemployment rate and provincial average income.

The dependent variable happiness has the following ordinal categories: 1) so unhappy in life, 2) very unhappy, 3) somewhat unhappy, 4) somewhat happy, and 5) happy in life. To estimate the model with ordinal dependent variable, this study used the Ordered Probit method. Using Ordered Probit Method in estimating happiness equation is quite a standard in the happiness literature (Powdthavee, 2007). Estimating happiness equation with Ordered Probit Method will allow comparing the results of this study with other related studies.

However, the ordered probit model does not take into account of the unobserved individual specific factors such as personality traits. The panel data used in this study allows utilizing fixed effects model to control for the unobserved individual specific fixed effects which may be correlated with other explanatory variables. To this end, this study also estimates following individual specific fixed effects models:³

$$\text{HAP}_{it} = \alpha + X_{it}\beta_x + \beta E_{jt} + \delta_j + \lambda t + \mu_i + \varepsilon_{it} \quad (3)$$

$$\text{HAP}_{it} = \alpha + X_{it}\beta_x + \beta E_{jt} + \sum_{k=1}^4 \beta_k E_{jt-k} + \delta_j + \lambda t + \mu_i + \varepsilon_{it} \quad (4)$$

Where, μ_i represents individual specific fixed effects.

In the vector of observable explanatory variables X , the variable ‘Gender’ is included research suggests that gender has an impact on happiness (Di Tella et al., 2001; Easterlin, 2003). A number of studies have found that women tend to be happier than men (Oswald, 1997; Di Tella et al. 2001; Easterlin, 2003; Blanchflower and Oswald, 2004). Both age and squared age are included in the model to take into account of the consistent finding in the happiness literature that age has a non-linear impact on happiness (Oswald, 1997; Van Hoorn, 2007). Marital status is included in the happiness model as a number of studies found that being married has a significant positive effect on life satisfaction, while divorce has a negative impact (Oswald,

² There is no hard fast rule regarding number of lags used in the regression model. A 4-year lag should allow for a reasonably lengthy adjustment period and at the same time will minimize the loss of sample size resulting from including additional lags. The study also utilizes a 6- year lag and there is no qualitative change in the results. Ruhm (2003), in his study, used a 2-year, 3-year, and 4-year lag.

³ In this case, the study utilizes a linear technique to analyze happiness, which assumes that the dependent variable is cardinal though in fact the happiness variable has ordinal characteristics. In their study, Ferrer-i-Carbonell and Frijters (2004) have showed that cardinal and ordinal analyses of wellbeing produce similar results. Clark et al. (2009) and Berger (2009) confirmed this finding of Ferrer-i-Carbonell and Frijters (2004). Since the results from the linear fixed effect model seem not to be biased by the cardinality assumption, this model is used in this study.

1997; Johnson and Wu, 2002; Zimmermann and Easterlin, 2006). The empirical evidence on the link between education and health is still inclusive as some studies have found a positive impact of education on happiness while other studies have found a negative or insignificant effect of education on happiness (Veenhoven, 1996; Clark and Oswald, 1996; Di Tella et al. 2001; Clark, 2003^b; Albert and Davia, 2005; Michalos, 2008; Cuñado and de Gracia, 2012). Housing ownership is included as an independent variable since wealth is found to have a positive impact on happiness as wealth provides highly valued economic security (Diaz-Serrano, 2009; Heady and Wooden, 2004). Another consistent finding in the happiness literature is that health has a significant positive effect on happiness (Van Hoorn, 2007). Generally, higher individual income is associated with higher level of individual happiness (Frey and Stutzer, 2002). Work status has an impact on happiness with unemployment negatively impacts while employment positively effects happiness (Croft, 2010; Latif, 2010; Carroll, 2007; Winkleman and Winkleman, 1998). There is no consistent result on the impact of the number of children on happiness (Di Tella et al. 2003; Haller and Hadler, 2006; Lelkes, 2006).

The empirical model includes lagged income inequality variables to take into account the possibility that income inequality may effect happiness with a lag rather than contemporaneously. Individuals may take time to notice that the province specific income inequality has increased and also the mechanisms through which income inequality impacts happiness may take time to operate. Thus it is important to include lagged income inequalities in the happiness equation.

4. Results

Table 1 provides the descriptive statistics of the explanatory variables. Table 2 provides descriptive statistics of the income inequality variables used in this study. Table 3 shows the distribution of happiness variable. The regression results for the models that use the Gini coefficient as a measure of income inequality are shown in Table 4. The results of the ordered probit analysis, shown in the second column, suggest that income inequality has a significant negative impact on happiness. Other results of the ordered probit model are as follows: females are happier than males; age has a U-shaped impact on happiness; married people are happier, whereas divorced/widowed people are less happy than single people; education has a significant positive impact on happiness; having owned a home positively impacts happiness; income has a significant positive effect on happiness; health positively impacts happiness; and employment positively impacts happiness. These results are in conformity with the findings from happiness literature. The third column of Table 4 provides the results when the lagged Gini coefficients are included along with the contemporaneous Gini coefficient. The results show that the contemporaneous Gini coefficient has a significant negative impact on happiness; however, the lagged Gini coefficients have a negative, but insignificant impact on happiness. The other results of this model are almost identical to those of the first model that does not include lagged values of the Gini coefficient.⁴ The fourth column of Table 4 shows the results of fixed effects model. The results suggest that income inequality has a significant negative impact on individual happiness. Other results of the fixed effects model include: married people are happier, whereas

⁴ The marginal effects after the ordered probit models are shown in Table-9 and Table-10.

divorced/widowed people are less happy than single people; health has a significant positive impacts on happiness; employment positively impacts happiness; and income has a significant positive impact on happiness. The fifth column of Table 4 shows the results of the fixed effects model when the lagged Gini coefficients are included along with the contemporaneous Gini coefficient. Once again, the Gini coefficient has a significant negative impact on happiness. Other results of this model are qualitatively similar to the findings from the fixed effects model that does not include lagged values of the Gini coefficient.

To check the robustness of the results, the study used the following measures of income inequality: decile ratio, coefficient of variation, log mean deviation and Theil index. Table 5, Table 6, Table 7 and Table 8 show the results of the models that include the decile ratio, the Coefficient of Variation, the Log Mean Deviation and the Theil index respectively as measure of income inequality.

In sum, the results of the ordered probit models suggest that contemporaneous income inequality has a significant negative impact on individuals' happiness. In most of the cases, the lagged income inequality variables are found to have a negative, but insignificant impact on happiness. The results of the fixed effects models also suggest that contemporaneous income inequality has a significant negative while lagged income inequalities have a negative but insignificant impact on happiness.

4.1 Further Tests for Robustness

As further check for the robustness of the results, this study splits the 'Being Married' into five groups: those who have been married for 0-2 years, 2-4 years, 4-6 years, 6-8 years, and 8 years or more. Similarly, this study splits 'Being Divorced/ Widowed' into following five groups: those who have been divorced/ widowed for 0-2 years, 2-4 years, 4-6 years, 6-8 years, and 8 years or more. The study estimates ordered probit models and fixed effects models by replacing dummy variables 'Being Married' and 'Being divorced/widowed' with newly created above 10 dummy variables. The results of the estimations, using 'Gini Coefficient' as a measure of income inequality, are shown in Appendix Table-2. Results of all specifications suggest that 'Gini coefficient' has a significant negative effect on individual happiness.

The variable 'Income' may be endogenous in the happiness model because of the possibility that both happiness and income are determined by some unobserved factors such as personality traits. This study utilizes individual specific fixed effects model to control for the unobserved time invariant individual specific factors. However, this method does not control for unobserved time variant factors which may be correlated with both income and happiness. Further there is a possibility of measurement error that is independent of the level of income (Li et al. 2011; Powdthavee, 2010). Consequently, the results of the study may suffer from endogeneity bias. The survey does not provide valid instruments to estimate instrumental variable models to deal with the endogeneity bias. However, this study drops income variable from the models and examines whether dropping income variable does change the main results. The results of the ordered probit models and fixed effects models, as shown in Appendix Table-1, suggest that income inequality measured by the 'Gini coefficient' still has a significant negative impact on happiness in all of the specifications.

This study also includes an indicator of being in poverty represented by a dummy variable suggesting whether or not the individual is in the lowest quintile of income distribution. The results of the ordered probit models and fixed effects models, shown in Appendix Table-3, again suggest that 'Gini coefficient' negatively impacts happiness.

Finally, this study includes a measure of crime rate in the happiness equation and estimated ordered probit models and fixed effects models. As provincial crime data are available only from 1998, the sample size has been reduced for these estimations. The results, as shown in Appendix Table-4, suggest that income inequality measured by the 'Gini coefficient' still has a significant negative impact on happiness.

5. Summary and Conclusion

Using panel data from the Canadian National Population Health Survey (1994-2009), this study examined the impact of income equality measured by the Gini coefficient on individual happiness. The results from the ordered probit method and the individual fixed effects method suggest that the contemporaneous Gini coefficient has a significant negative impact on individual happiness. To check the robustness of these results, the study utilized a number of measures of income inequality, including the decile ratio, coefficient of variation, log mean deviation, and Theil index. All of the measures show that contemporaneous income inequality has a significant negative effect on individual happiness. The study also finds that lagged income inequalities have a negative, but insignificant impact on individual happiness.

A number of studies used contemporaneous Gini coefficient as a measure of income inequality to estimate happiness model. Alesina et al. (2004), after controlling for personal characteristics of the respondents, state/country effects and year effects, found that income inequality significantly reduced subjective well-being amongst Europeans. Using data from the German Socio-Economic Panel Study (1985-1999), Schwarze and Härpfer (2007) found that income inequality had a significant negative effect on life satisfaction. In their study on transition countries, Sanfey and Teksoz (2007) found that satisfaction levels were highest in those countries where standards of economic governance were most advanced and where inequality was lower. Using micro level data from two nationwide surveys in Japan, Oshio and Kobayashi (2011) found that individuals who lived in areas of high income inequality were less happy, even after controlling for various individual and area level factors. Thus, the main result of these reviewed studies that inequality has a significant negative impact on individual happiness is consistent with the finding of this research. The current research uses a number of robustness checks such as utilizing fixed effects methods and including various measures of income inequalities and all of the specifications show that income inequality has a significant negative effect on happiness. Thus, the results of this study have strengthened the findings of other related studies.

The results of this study have significant policy implications. The results point that income inequality negatively impacts individual happiness and this is another cost of increasing income inequality. Policy makers who care about the well-being of Canadian people may need to seek ways to halt the process of increasing income inequality.

Future studies may focus on other countries including developing countries as well as emerging economics to examine the relationship between income inequality and happiness. Further studies, using Canadian data, may utilise reference group income as a measure of income inequality, and may examine whether the impact of income inequality on happiness differs between males and females, among age groups, among education categories, and among income quintiles. Future study may also investigate whether the impact of income inequality on happiness differs between people who are living in economically advanced provinces in Canada and those who are in economically less advanced provinces.

Table 1: Descriptive Statistics

Variable	Overall Sample	Male Sample	Female Sample
Age (Average figure)	45.27 (.088)	44.96 (.129)	45.55 (.121)
Single	.17 (.002)	.19 (.004)	.16 (.003)
Married	.70 (.003)	.74 (.004)	.67 (.004)
Divorced/ Widow	.12 (.002)	.07 (.003)	.17 (.003)
Less Than Secondary Education	.13 (.002)	.13 (.003)	.12 (.002)
Secondary Graduate Education	.15 (.002)	.14 (.004)	.16 (.003)
College- University Education	.48 (.003)	.49 (.004)	.48 (.004)
Some Post -Secondary Education	.23 (.002)	.23 (.004)	.23 (.003)
Home Ownership	.79 (.003)	.80 (.004)	.78 (.003)
Household Income	\$64,841 (258.08)	\$69,324 (416.74)	\$60,659 (306.47)

Source: National Population Health Survey

Table 2: Descriptive Statistics of Inequality Variables

	Mean	Standard Deviation (Overall)	Standard Deviation (Between)	Standard Deviation (Within)
Gini Coefficient	.269	.090	.034	.084
Decile Ratio	4.37	1.14	.253	1.11
Coefficient of Variation	.164	.090	.035	.083
Log Mean Deviation	.161	.088	.033	.081
Theil Index	.142	.087	.033	.080

Source: National Population Health Survey

Table 3: Distribution of Happiness in the sample

Happiness	Count	Percentage
So unhappy in life (1)	56	0.13
Very unhappy (2)	150	0.34
Somewhat Unhappy (3)	915	2.09
Somewhat happy (4)	7,270	16.61
Happy in life (5)	35,380	80.83
Total	43,771	100

Source: National Population Health Survey

Table 4: Regression Results: Determinants of Happiness

Variable	Ordered Probit Model	Ordered Probit Model	Fixed Effects Model	Fixed Effects Model
Gini Coefficient	-.138* (.056)	-.140* (.056)	-.030* (.012)	-.032* (.013)
Lag 1 Gini Coefficient		-.063 (.037)		-.011 (.010)
Lag 2 Gini Coefficient		.277 (.318)		.012 (.007)
Lag 3 Gini Coefficient		.077 (.054)		-.002 (.007)
Lag 4 Gini Coefficient		.024 (.046)		-.009 (.007)
Female	.045* (.012)	.045* (.012)		
Age	-.033* (.003)	-.033* (.003)	-.0008 (.010)	-.0008 (.010)
Squared Age	.0004* (.00003)	.0004* (.00003)	.000007 (.00003)	.000008 (.00002)
Marital Status -Base: Single				
Being Married	.279* (.020)	.279* (.020)	.061* (.012)	.061* (.012)
Being Widow/ Divorced	-.058** (.021)	-.057** (.021)	-.052** (.019)	-.052** (.019)
Education Status Base: Less Than Secondary				
Secondary Grad.	.026 (.025)	.027 (.025)	.039 (.028)	.039 (.028)
Some Post-Secondary Education	.047** (.020)	.048** (.020)	-.027 (.022)	-.027 (.022)
College University Education	.071* (.019)	.060* (.021)	.007 (.019)	.007 (.019)
Health Status Base: Poor Health				
Excellent	.929* (.040)	.929* (.040)	.135* (.012)	.135* (.012)
Very Good	.555* (.038)	.555* (.038)	.109* (.014)	.109* (.014)
Good	.213* (.037)	.213* (.037)	.064* (.017)	.064* (.015)
Fair	.226* (.041)	.227* (.041)	.061* (.021)	.061* (.020)
Employed	.163* (.018)	.163* (.018)	.037* (.007)	.037* (.007)
Having Own Home	.102* (.016)	.102* (.017)	.008 (.009)	.008 (.009)
Log Household Income	.118* (.011)	.117* (.011)	.019* (.005)	.019* (.005)
Number of Children	.048* (.011)	.047* (.011)	.002 (.004)	.002 (.004)
Household Size	-.021* (.007)	-.021* (.007)	-.003 (.003)	-.003 (.003)
Provincial GDP Growth	.009***	.009**	.002	.002

	(.005)	(.005)	(.002)	(.002)
Provincial Unemployment Rate	.017 (.015)	.017 (.015)	.003 (.004)	.003 (.004)
Provincial Mean Income	.696** (.338)	.741** (.341)	.250* (.019)	.253* (.019)
Province Control	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Pseudo R-Squared	0.0799	0.080		
R- Squared within			0.0231	0.0231
R- Squared between			0.1297	0.1300
R-Squared overall			0.0660	0.0661

Notes: Significance: * 1%, ** 5%, ***10%

Table 5: Regression Results: Determinants of Happiness

Variable	Ordered Probit	Ordered Probit	Fixed Effects	Fixed Effects
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	Model	Model	Model	Model
Decile Ratio	-.037** (.016)	-.038** (.017)	-.011** (.004)	-.011** (.005)
Lag 1 Decile Ratio		-.013 (.015)		.002 (.004)
Lag 2 Decile Ratio		-.006 (.018)		.002 (.004)
Lag 3 Decile Ratio		-.028** (.014)		-.004 (.004)
Lag 4 Decile Ratio		-.009 (.014)		-.002 (.004)
Female	.045* (.012)	.045* (.014)		
Age	-.033* (.003)	-.033* (.003)	-.0009 (.010)	-.0009 (.010)
Squared Age	.0004* (.00003)	.0004* (.00003)	.000006 (.00002)	.000006 (.00002)
Marital Status -Base: Single				
Being Married	.279* (.022)	.279* (.022)	.061* (.012)	.061* (.012)
Being Widow/ Divorced	-.058** (.025)	-.058** (.028)	-.052** (.019)	-.052** (.019)
Education Status Base: Less Than Secondary				
Secondary Grad.	.026 (.025)	.027 (.025)	.039 (.028)	.039 (.028)
Some Post-Secondary Education	.047** (.021)	.048** (.021)	-.027 (.022)	-.027 (.022)
College University Education	.059* (.019)	.060* (.021)	-.007 (.019)	-.007 (.023)
Health Status Base: Poor Health				
Excellent	.929* (.040)	.929* (.040)	.135* (.012)	.135* (.012)
Very Good	.554* (.038)	.554* (.038)	.109* (.014)	.109* (.014)
Good	.213* (.037)	.213* (.037)	.064* (.017)	.064* (.015)
Fair	.226* (.041)	.227* (.041)	.061* (.021)	.061* (.020)
Employed	.164* (.018)	.165* (.018)	.037* (.007)	.037* (.007)
Having Own Home	.102* (.017)	.102* (.017)	.009 (.009)	.009 (.009)
Log Household Income	.118* (.011)	.118* (.011)	.019* (.005)	.019* (.005)
Number of Children	.048* (.011)	.049* (.011)	.002 (.004)	.002 (.004)
Household Size	-.021* (.007)	-.021* (.007)	-.003 (.003)	-.003 (.003)
Provincial GDP Growth	.009*** (.005)	.010*** (.006)	.002 (.002)	.002 (.002)
Provincial Unemployment Rate	.010	.011	.003	.003

	(.015)	(.016)	(.004)	(.004)
Provincial Mean Income	.495 (.358)	.596 (.361)	.220* (.088)	.215* (.089)
Province Control	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Pseudo R-Squared	0.0798	0.0799		
R- Squared within			0.0230	0.0231
R- Squared between			0.1278	0.1273
R-Squared overall			0.0654	0.0652

Notes: Significance: * 1%, ** 5%, ***10%

Table 6: Regression Results: Determinants of Happiness

Variable	Ordered Probit Model	Ordered Probit Model	Fixed Effects Model	Fixed Effects Model

Coefficient of Variation	-.138* (.055)	-.138** (.057)	-.031** (.012)	-.033* (.013)
Lag 1 Coefficient of Variation		-.055 (.040)		-.008 (.014)
Lag 2 Coefficient of Variation		.193 (.198)		.010 (.008)
Lag 3 Coefficient of Variation		-.093 (.068)		-.003 (.008)
Lag 4 Coefficient of Variation		-.022 (.048)		-.008 (.008)
Female	.045* (.014)	.045* (.014)		
Age	-.033* (.003)	-.033* (.003)	-.0008 (.010)	-.0008 (.010)
Squared Age	.0004* (.00004)	.0004* (.00004)	-.000007 (.00002)	-.000006 (.00002)
Marital Status -Base: Single				
Being Married	.279* (.022)	.279* (.022)	.061* (.012)	.061* (.013)
Being Widow/ Divorced	-.058** (.026)	-.057** (.026)	-.052** (.019)	-.052** (.019)
Education Status Base: Less Than Secondary				
Secondary Grad.	.026 (.025)	.027 (.025)	.039 (.028)	.039 (.028)
Some Post-Secondary Education	.047** (.021)	.048** (.021)	-.027 (.022)	-.027 (.022)
College University Education	.060* (.021)	.060* (.021)	-.007 (.019)	-.007 (.023)
Health Status Base: Poor Health				
Excellent	.929* (.040)	.929* (.040)	.135* (.012)	.135* (.012)
Very Good	.554* (.038)	.555* (.038)	.109* (.014)	.109* (.014)
Good	.213* (.038)	.213* (.038)	.064* (.017)	.064* (.015)
Fair	.226* (.042)	.227* (.042)	.061* (.020)	.061* (.020)
Employed	.164* (.018)	.163* (.018)	.037* (.007)	.037* (.007)
Having Own Home	.102* (.017)	.102* (.017)	.008 (.009)	.008 (.009)
Log Household Income	.118* (.011)	.117* (.011)	.019* (.005)	.019* (.005)
Number of Children	.048* (.011)	.048* (.011)	.002 (.004)	.002 (.004)
Household Size	-.021* (.007)	-.020* (.007)	-.003 (.003)	-.003 (.003)
Provincial GDP Growth	.010 (.006)	.009 (.006)	.002 (.002)	.002 (.002)
Provincial Unemployment Rate	.017 (.015)	.018 (.015)	.004 (.004)	.004 (.004)
Provincial Mean Income	.698**	.757**	.251*	.251*

	(.337)	(.344)	(.091)	(.091)
Province Control	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Pseudo R-Squared	0.0799	0.0800		
R- Squared within			0.0231	0.0231
R- Squared between			0.1298	0.1301
R-Squared overall			0.0661	0.0662

Notes: Significance: * 1%, ** 5%, ***10%

Table 7: Regression Results: Determinants of Happiness

Variable	Ordered Probit Model	Ordered Probit Model	Fixed Effects Model	Fixed Effects Model
Log Mean Deviation	-.139* (.057)	-.140** (.055)	-.031** (.011)	-.033* (.013)

Lag 1 Log Mean Deviation		-.059 (.038)		-.009 (.011)
Lag 2 Log Mean Deviation		.557 (.433)		-.012** (.006)
Lag 3 Log Mean Deviation		.102 (.068)		-.001 (.006)
Lag 4 Log Mean Deviation		.056 (.048)		-.006 (.005)
Female	.045* (.014)	.045* (.014)		
Age	-.033* (.003)	-.033* (.003)	-.0008 (.010)	-.0008 (.010)
Squared Age	.0004* (.00003)	.0004* (.00004)	-.000008 (.00002)	-.000008 (.00002)
Marital Status -Base: Single				
Being Married	.279* (.022)	.279* (.022)	.061* (.012)	.061* (.012)
Being Widow/ Divorced	-.058** (.026)	-.057** (.026)	-.052** (.019)	-.052** (.019)
Education Status Base: Less Than Secondary				
Secondary Grad.	.026 (.025)	.027 (.025)	.039 (.028)	.039 (.028)
Some Post-Secondary Education	.047** (.021)	.048** (.021)	-.027 (.022)	-.027 (.022)
College University Education	.060* (.021)	.060* (.021)	-.007 (.023)	-.007 (.023)
Health Status Base: Poor Health				
Excellent	.929* (.040)	.929* (.040)	.135* (.012)	.135* (.012)
Very Good	.555* (.038)	.555* (.038)	.109* (.014)	.109* (.014)
Good	.213* (.038)	.212* (.038)	.064* (.015)	.064* (.015)
Fair	.226* (.042)	.227* (.042)	.061* (.020)	.061* (.020)
Employed	.164* (.018)	.163* (.018)	.037* (.007)	.037* (.007)
Having Own Home	.102* (.017)	.102* (.017)	.008 (.009)	.008 (.009)
Household Income	.117* (.011)	.117* (.011)	.019* (.005)	.019* (.005)
Number of Children	.048* (.011)	.047* (.011)	.002 (.004)	.002 (.004)
Household Size	-.021* (.007)	-.020* (.007)	-.003 (.003)	-.003 (.003)
Provincial GDP Growth	.010 (.006)	.009 (.006)	.002 (.002)	.002 (.002)
Provincial Unemployment Rate	.016 (.015)	.015 (.015)	.003 (.004)	.004 (.004)
Provincial Mean Income	.696** (.338)	.766** (.341)	.250* (.091)	.252* (.091)
Province Control	Yes	Yes	Yes	Yes

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Time Fixed Effects	Yes	Yes	Yes	Yes
Pseudo R-Squared	0.0799	0.0800		
R- Squared within			0.0231	0.0231
R- Squared between			0.1297	0.1299
R-Squared overall			0.0660	0.0661

Notes: Significance: * 1%, ** 5%, ***10%

Table 8: Regression Results: Determinants of Happiness

Variable	Ordered Probit Model	Ordered Probit Model	Fixed Effects Model	Fixed Effects Model
Theil Index	-.139* (.057)	-.140** (.055)	-.032** (.011)	-.034* (.013)
Lag 1 Theil Index		-.059 (.038)		-.011 (.010)
Lag 2 Theil Index		.557 (.433)		-.011** (.006)
Lag 3 Theil Index		.102 (.068)		-.0007 (.006)
Lag 4 Theil Index		.056 (.048)		-.008 (.005)
Female	.045* (.014)	.045* (.014)		
Age	-.033* (.003)	-.033* (.003)	-.0008 (.010)	-.0008 (.010)
Squared Age	.0004* (.00003)	.0004* (.00004)	-.000007 (.00002)	-.000007 (.00002)
Marital Status -Base: Single				
Being Married	.279* (.022)	.279* (.022)	.061* (.012)	.061* (.012)
Being Widow/ Divorced	-.058** (.026)	-.057** (.026)	-.052** (.019)	-.052** (.019)
Education Status Base: Less Than Secondary				
Secondary Grad.	.026 (.025)	.027 (.025)	.039 (.028)	.039 (.028)
Some Post-Secondary Education	.047** (.021)	.048** (.021)	-.027 (.022)	-.027 (.022)
College University Education	.060* (.021)	.060* (.021)	-.007 (.023)	-.007 (.023)
Health Status Base: Poor Health				
Excellent	.929* (.040)	.929* (.040)	.135* (.012)	.135* (.012)
Very Good	.555* (.038)	.555* (.038)	.109* (.014)	.109* (.014)
Good	.213* (.038)	.212* (.038)	.064* (.015)	.064* (.015)
Fair	.226* (.042)	.227* (.042)	.061* (.020)	.061* (.020)
Employed	.164* (.018)	.163* (.018)	.037* (.008)	.037* (.007)
Having Own Home	.102* (.017)	.102* (.017)	.008 (.009)	.008 (.009)
Household Income	.117* (.011)	.117* (.011)	.019* (.005)	.019* (.005)
Number of Children	.048* (.011)	.047* (.011)	.002 (.004)	.002 (.004)

Household Size	-.021* (.007)	-.020* (.007)	-.003 (.003)	-.003 (.003)
Provincial GDP Growth	.010 (.006)	.009 (.006)	.002 (.002)	.002 (.002)
Provincial Unemployment Rate	.016 (.015)	.015 (.015)	.003 (.004)	.004 (.004)
Provincial Mean Income	.696** (.338)	.766** (.341)	.252* (.091)	.255* (.091)
Province Control	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Pseudo R-Squared	0.0799	0.0800		
R- Squared within			0.0231	0.0231
R- Squared between			0.1298	0.1301
R-Squared overall			0.0661	0.0662

Notes: Significance: * 1%, ** 5%, ***10%

Table 9: Marginal Effects (Ordered Probit Model without lagged Gini Coefficients)

Variable	Outcome 1	Outcome2	Outcome 3	Outcome 4	Outcome 5
Gini Coefficient	.0001* (.00007)	.0007 ** (.0003)	.004** (.002)	-.029* (.012)	-.035* (.014)
Female	-.00005* (.00002)	-.0002* (.00007)	-.001 * (.0005)	.009* (.003)	.011 * (.003)
Age	.00003* (.00001)	.0001* (.00002)	.001* (.0001)	-.007* (.0007)	-.008* (.0009)
Squared Age	-.00005* (.00001)	-.00002** (.00001)	-.00001* (.000001)	.00009* (.000001)	.0001* (.00001)
Marital Status -Base: Single					
Being Married	-.0003* (.00007)	-.0002* (.00001)	-.001 * (.0009)	.061* (.005)	.074* (.006)
Being Widow/ Divorced	.00007** (.00004)	.0003* (.0001)	.002* (.0009)	-.012* (.005)	-.015* (.006)
Education Status Base: Less Than Secondary					
Secondary Grad.	-.00003 (.00003)	-.0001 (.0001)	-.0008 (.0008)	-.005 (.005)	.006 (.006)
Some Post-Secondary Education	-.00005** (.00002)	-.0002** (.0001)	-.001 * (.0006)	.010** (.005)	.012* (.005)
College University Education	-.00006** (.00003)	-.0003* (.0001)	-.002* (.0006)	.012 (.008)	.015* (.005)
Health Status Base: Poor Health					
Excellent	-.0006* (.0001)	-.003* (.0002)	-.020* (.0009)	.156* (.005)	.180* (.005)
Very Good	-.0006* (.0001)	-.002* (.0003)	-.016* (.001)	.114* (.007)	.135* (.008)
Good	-.0002* (.00005)	-.0009* (.0001)	-.006* (.001)	.044* (.007)	.051* (.008)
Fair	-.0003* (.0001)	-.001* (.0003)	-.008* (.002)	.051* (.010)	.063* (.012)
Employed	-.0002* (.00004)	-.0009* (.0001)	-.006* (.0007)	.037* (.004)	.043* (.005)
Having Own Home	-.0001* (.00003)	-.0005* (.0001)	-.003* (.0006)	.022* (.004)	.026* (.004)
Log Household Income	-.0001* (.00003)	-.0006* (.00008)	-.004* (.0004)	.025* (.002)	.029* (.003)
Number of Children	-.00005* (.00002)	-.0002* (.00006)	-.001 * (.0005)	.010* (.002)	.012* (.003)
Household Size	.00002* (.00001)	.0001* (.00004)	.0007* (.0002)	-.004* (.001)	-.006* (.002)
Provincial GDP Growth	-.00001 (.00001)	-.00005 (.00003)	-.0003 (.0002)	.002** (.001)	.002* (.001)
Provincial Unemployment Rate	-.00002 (.00002)	-.00008 (.00008)	-.0005 (.0005)	-.003 (.003)	.004 (.004)
Provincial Mean Income	-.0008** (.0004)	-.0003* (.0001)	-.022** (.011)	.149* (.061)	.176** (.086)

Notes: Significance: * 1%, ** 5%, ***10%; Outcome 1: So unhappy in life, Outcome 2: Very unhappy in life, Outcome 3: Somewhat unhappy in life, Outcome 4: Somewhat happy in life Outcome 5: Happy in life

Table 10: Marginal Effects (Ordered Probit Model with Lagged Gini coefficients)

Variable	Outcome 1	Outcome2	Outcome 3	Outcome 4	Outcome 5
Gini Coefficient	.0001* (.00007)	.0007** (.0003)	.005** (.002)	-.032* (.012)	-.038* (.011)
Lag 1 Gini Coefficient	.00007 (.0005)	.0003 (.0002)	.002* (.001)	.014 (.080)	-.016* (.009)
Lag 2 Gini Coefficient	-.0003 (.0003)	-.001 (.001)	-.010 (.010)	-.068 (.068)	-.081 (.081)
Lag 3 Gini Coefficient	-.00001 (.0007)	-.0004 (.0003)	-.003 (.002)	-.018 (.016)	-.022 (.014)
Lag 4 Gini Coefficient	-.00003 (.00006)	-.0001 (.0002)	.001 (.001)	-.007 (.010)	.088 (.012)
Female	-.00004* (.00002)	-.0001* (.00007)	-.001* (.0005)	.008* (.003)	.009* (.003)
Age	.00004* (.00001)	.0001* (.00002)	.001* (.0001)	-.007* (.0007)	-.008* (.0009)
Squared Age	-.00005* (.00001)	-.00002** (.00001)	-.00001* (.000001)	.00009* (.000001)	.0001* (.00001)
Marital Status -Base: Single					
Being Married	-.0004* (.00008)	-.002* (.0002)	-.011* (.0009)	.068* (.005)	.084* (.006)
Being Widow/ Divorced	.00008** (.00004)	.0003* (.0001)	.002* (.0009)	-.014* (.005)	-.016* (.006)
Education Status Base: Less Than Secondary					
Secondary Grad.	-.00004 (.00003)	-.0002** (.0001)	-.001* (.0008)	-.008 (.005)	.009 (.006)
Some Post-Secondary Education	-.00006** (.00003)	-.0003** (.0001)	-.002* (.0006)	.013** (.005)	.015* (.005)
College University Education	-.0001** (.00003)	-.0004* (.0001)	-.003* (.0006)	.020* (.004)	.023* (.005)
Health Status Base: Poor Health					
Excellent	-.0006* (.0001)	-.003* (.0002)	-.020* (.0009)	.156* (.005)	.182* (.005)
Very Good	-.0006* (.0001)	-.002* (.0003)	-.018* (.001)	.116* (.007)	.137* (.008)
Good	-.0002* (.00005)	-.0009* (.0001)	-.006* (.001)	.044* (.007)	.053* (.008)
Fair	-.0004* (.0001)	-.001* (.0003)	-.010* (.002)	.055* (.010)	.067* (.012)
Employed	-.0002* (.00005)	-.001* (.0001)	-.007* (.0007)	.043* (.004)	.053* (.005)
Having Own Home	-.0001* (.00004)	-.0007* (.0001)	-.005* (.00067)	.030* (.004)	.036* (.004)
Log Household Income	-.0001* (.00003)	-.0003* (.00008)	-.004* (.0004)	.025* (.002)	.029* (.003)
Number of Children	-.00004* (.00001)	-.0002* (.00006)	-.001* (.0005)	.007* (.002)	.008* (.002)
Household Size	.00002* (.00001)	.00004* (.00004)	.0007* (.0002)	-.001* (.001)	-.002* (.002)
Provincial GDP Growth	-.00001	-.00005	-.0002	.002**	.002*

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	(.00001)	(.00003)	(.0002)	(.001)	(.001)
Provincial Unemployment Rate	-.00002 (.00002)	-.00009 (.00008)	-.0006 (.0005)	-.004 (.003)	.004 (.003)
Provincial Mean Income	-.0009** (.0004)	-.004* (.001)	-.027** (.011)	.175* (.071)	.208** (.086)

Notes: Significance: * 1%, ** 5%, ***10%; Outcome 1: So unhappy in life, Outcome 2: Very unhappy in life, Outcome 3: Somewhat unhappy in life, Outcome 4: Somewhat happy in life Outcome 5: Happy in life

Appendix Table 1: Regression Results: Determinants of Happiness

Variable	Ordered Probit Model	Ordered Probit Model	Fixed Effects Model	Fixed Effects Model
Gini Coefficient	-.148* (.056)	-.156* (.056)	-.032* (.012)	-.034* (.012)
Lag 1 Gini Coefficient		-.065*** (.037)		-.011 (.011)
Lag 2 Gini Coefficient		.312 (.320)		.013 (.008)
Lag 3 Gini Coefficient		.087 (.056)		-.001 (.007)
Lag 4 Gini Coefficient		.034 (.047)		-.008 (.006)
Female	.037* (.014)	.037* (.014)		
Age	-.033* (.003)	-.033* (.003)	.0001 (.010)	.0001 (.010)
Squared Age	.0004* (.00003)	.0004* (.00003)	.000005 (.00002)	.000005 (.00002)
Marital Status -Base: Single				
Being Married	.310* (.020)	.310* (.022)	.066* (.012)	.066* (.012)
Being Widow/ Divorced	-.065** (.021)	-.065** (.021)	-.050** (.019)	-.049** (.019)
Education Status Base: Less Than Secondary				
Secondary Grad.	.038 (.025)	.039 (.024)	.036 (.028)	.036 (.028)
Some Post-Secondary Education	.062* (.020)	.062* (.021)	-.030 (.022)	-.030 (.022)
College University Education	.093* (.019)	.094* (.020)	.009 (.022)	.009 (.022)
Health Status Base: Poor Health				
Excellent	.943* (.040)	.943* (.041)	.135* (.012)	.135* (.012)
Very Good	.564* (.038)	.565* (.038)	.109* (.014)	.109* (.014)
Good	.213* (.037)	.215* (.037)	.064* (.015)	.064* (.015)
Fair	.241* (.041)	.242* (.041)	.063* (.020)	.063* (.020)
Employed	.197* (.018)	.196* (.017)	.039* (.007)	.039* (.007)
Having Own Home	.138* (.012)	.138* (.016)	.010 (.009)	.010 (.009)
Number of Children	.033* (.011)	.033* (.011)	.001 (.004)	.001 (.004)
Household Size	-.007 (.007)	-.007 (.007)	-.001 (.003)	-.001 (.003)
Provincial GDP Growth	.009*** (.005)	.008 (.006)	.002 (.002)	.002 (.002)
Provincial Unemployment Rate	.018	.019	.003	.003

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	(.015)	(.015)	(.004)	(.004)
Provincial Mean Income	.767** (.338)	.818** (.342)	.261* (.019)	.265* (.019)
Province Control	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Pseudo R-Squared	0.0780	0.0781		
R- Squared within			0.0226	0.0227
R- Squared between			0.1339	0.1342
R-Squared overall			0.0663	0.0663

Notes: Significance: * 1%, ** 5%, ***10%

Appendix Table 2: Regression Results: Determinants of Happiness

Variable	Ordered	Ordered	Fixed	Fixed
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	Probit Model	Probit Model	Effects Model	Effects Model
Gini Coefficient	-.139* (.058)	-.141* (.058)	-.031* (.012)	-.033* (.012)
Lag 1 Gini Coefficient		-.069*** (.041)		-.009 (.011)
Lag 2 Gini Coefficient		.285 (.320)		-.013*** (.007)
Lag 3 Gini Coefficient		.079 (.055)		-.008 (.007)
Lag 4 Gini Coefficient		.026 (.025)		-.006 (.007)
Female	.045* (.014)	.045* (.014)		
Age	-.025* (.003)	-.026* (.003)	.002 (.010)	.001 (.010)
Squared Age	.0003* (.00003)	.0003* (.00003)	-.00002 (.00003)	-.00002 (.00003)
Marital Status -Base: Single				
Married (0- 2 years)	.094** (.052)	.095** (.052)	.026*** (.016)	.027*** (.016)
Married (2-4 years)	.053 (.047)	.053 (.047)	.019 (.014)	.019 (.014)
Married (4-6 years)	.085** (.041)	.085** (.041)	.006 (.012)	.006 (.012)
Married (6-8 years)	.075* (.031)	.075* (.031)	.013 (.010)	.013 (.010)
Married (8 years and over)	.099* (.016)	.099* (.016)	.015** (.008)	.015** (.008)
Widow/Divorced (0- 2 years)	-.282* (.080)	-.282* (.080)	-.156* (.030)	-.156* (.030)
Widow/ Divorced (2-4 years)	.003 (.074)	.004 (.074)	.008 (.027)	.008 (.027)
Widow/ Divorced (4-6 years)	-.101 (.065)	-.101 (.065)	-.066* (.024)	-.066* (.024)
Widow/ Divorced (6-8 years)	-.023 (.053)	-.022 (.055)	-.015 (.019)	-.015 (.019)
Widow/ Divorced (8 years and over)	-.054* (.021)	-.054* (.021)	-.036* (.013)	-.036* (.013)
Education Status Base: Less Than Secondary				
Secondary Grad.	.028 (.025)	.028 (.025)	.037 (.028)	.037 (.028)
Some Post-Secondary Education	.050** (.021)	.050** (.021)	-.030 (.022)	-.030 (.022)
College University Education	.058* (.021)	.059* (.021)	-.009 (.023)	-.009 (.023)
Health Status Base: Poor Health				
Excellent	.925* (.040)	.925* (.040)	.135* (.012)	.135* (.012)
Very Good	.555* (.033)	.554* (.0383)	.109* (.014)	.109* (.014)

Good	.209* (.037)	.209* (.038)	.064* (.015)	.064* (.015)
Fair	.230* (.041)	.230* (.042)	.061* (.021)	.061* (.021)
Employed	.161* (.018)	.161* (.018)	.035* (.007)	.035* (.007)
Having Own Home	.112* (.016)	.112* (.017)	.011 (.009)	.011 (.009)
Log Household Income	.132* (.011)	.132* (.012)	.021* (.005)	.021* (.005)
Number of Children	.053* (.011)	.053* (.011)	.003 (.004)	.003 (.004)
Household Size	-.007 (.007)	-.007 (.007)	-.003 (.003)	-.001 (.003)
Provincial GDP Growth	.009*** (.005)	.009*** (.005)	.002 (.002)	.002 (.002)
Provincial Unemployment Rate	.017 (.015)	.017 (.015)	.003 (.004)	.003 (.004)
Provincial Mean Income	.731** (.338)	.778** (.342)	.261* (.091)	.264* (.091)
Province Control	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Pseudo R-Squared	0.0777	0.0778		
R- Squared within			0.0237	0.0237
R- Squared between			0.1122	0.1124
R-Squared overall			0.0600	0.0601

Notes: Significance: * 1%, ** 5%, ***10%

Appendix Table 3: Regression Results: Determinants of Happiness

Variable	Ordered Probit	Ordered Probit	Fixed Effects	Fixed Effects Model
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	Model	Model	Model	
Gini Coefficient	-.139* (.056)	-.140* (.056)	-.030* (.012)	-.032* (.013)
Lag 1 Gini Coefficient		-.063 (.037)		-.010 (.011)
Lag 2 Gini Coefficient		.279 (.319)		.012 (.007)
Lag 3 Gini Coefficient		.076 (.054)		-.002 (.007)
Lag 4 Gini Coefficient		.024 (.046)		-.009 (.007)
Female	.045* (.014)	.045* (.014)		
Age	-.033* (.003)	-.033* (.003)	-.0008 (.010)	-.0008 (.010)
Squared Age	.0004* (.00003)	.0004* (.00003)	.000001 (.00003)	.000001 (.00002)
Marital Status -Base: Single				
Being Married	.275* (.022)	.276* (.020)	.061* (.012)	.060* (.012)
Being Widow/ Divorced	-.057** (.026)	-.056** (.026)	-.052** (.019)	-.052** (.019)
Education Status Base: Less Than Secondary				
Secondary Grad.	.023 (.025)	.024 (.025)	.040 (.028)	.040 (.028)
Some Post-Secondary Education	.046** (.020)	.046** (.021)	-.027 (.022)	-.027 (.022)
College University Education	.058* (.019)	.059* (.021)	.007 (.022)	.007 (.019)
Health Status Base: Poor Health				
Excellent	.925* (.040)	.925* (.040)	.135* (.012)	.134* (.012)
Very Good	.550* (.038)	.551* (.038)	.108* (.014)	.108* (.014)
Good	.209* (.037)	.209* (.037)	.063* (.017)	.063* (.015)
Fair	.228* (.041)	.229* (.041)	.062* (.021)	.062* (.020)
Employed	.158* (.018)	.158* (.018)	.036* (.007)	.036* (.007)
Having Own Home	.097* (.016)	.097* (.017)	.008 (.009)	.008 (.009)
Log Household Income	.097* (.0131)	.117* (.011)	.012* (.005)	.012* (.005)
Number of Children	.049* (.011)	.049* (.011)	.003 (.004)	.002 (.004)
Household Size	-.019* (.007)	-.019* (.007)	-.003 (.003)	-.003 (.003)
Provincial GDP Growth	.009*** (.005)	.009 (.006)	.002 (.002)	.002 (.002)
Provincial Unemployment Rate	.017	.017	.004	.004

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	(.015)	(.015)	(.004)	(.004)
Provincial Mean Income	.694** (.338)	.740** (.341)	.249* (.091)	.253* (.091)
Lowest Income	-.081* (.028)	-.080* (.028)	-.032* (.013)	-.032* (.013)
Province Control	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Pseudo R-Squared	0.0801	0.0802		
R- Squared within			0.0233	0.0233
R- Squared between			0.1311	0.1314
R-Squared overall			0.0668	0.0669

Notes: Significance: * 1%, ** 5%, ***10%

Appendix Table 4: Regression Results: Determinants of Happiness

Variable	Ordered Probit Model	Ordered Probit Model	Fixed Effects Model	Fixed Effects Model
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Gini Coefficient	-.142* (.061)	-.140* (.056)	-.037* (.015)	-.033* (.013)
Lag 1 Gini Coefficient		-.063*** (.037)		-.036 (.047)
Lag 2 Gini Coefficient		.771 (.525)		.012 (.007)
Lag 3 Gini Coefficient		-.512** (.228)		-.002 (.007)
Lag 4 Gini Coefficient		.024 (.046)		-.009 (.007)
Female	.049* (.018)	.038* (.014)		
Age	-.042* (.004)	-.043* (.008)	-.016 (.012)	-.011 (.023)
Squared Age	.0005* (.00005)	.0004* (.00003)	.00003 (.0001)	.00003 (.0001)
Marital Status -Base: Single				
Being Married	.274* (.027)	.318* (.042)	.052* (.024)	.037* (.012)
Being Widow/ Divorced	-.068** (.030)	-.033* (.046)	-.052** (.021)	-.083** (.033)
Education Status Base: Less Than Secondary				
Secondary Grad.	-.002 (.031)	.038 (.049)	.019 (.044)	.018 (.121)
Some Post-Secondary Education	.013 (.026)	.032 (.041)	-.067 (.057)	-.027 (.022)
College University Education	.025 (.019)	.038 (.039)	.034 (.036)	.022 (.056)
Health Status Base: Poor Health				
Excellent	.891* (.040)	.739* (.053)	.105* (.012)	.061* (.012)
Very Good	.473* (.040)	.443* (.046)	.086* (.014)	.031* (.014)
Good	.121* (.037)	.227* (.047)	.050* (.017)	.063* (.015)
Fair	.321* (.041)	.536* (.057)	.078* (.021)	.099* (.037)
Employed	.179* (.022)	.188* (.018)	.044* (.010)	.037 (.022)
Having Own Home	.099* (.021)	.121* (.033)	.007 (.012)	.018 (.032)
Log Household Income	.090* (.015)	.117* (.011)	.005 (.006)	.012 (.015)
Number of Children	.064* (.011)	.052* (.022)	.002 (.005)	.004 (.016)
Household Size	-.018* (.007)	-.017* (.007)	.003 (.004)	.006 (.011)
Provincial GDP Growth	.010 (.007)	.032 (.020)	.002 (.002)	.002 (.002)
Provincial Unemployment Rate	.015 (.020)	.024 (.066)	.002 (.004)	.005 (.017)

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Provincial Mean Income	.543 (.338)	.440 (.341)	.162 (.111)	.153 (.091)
Lowest Income	-.104* (.031)	-.218* (.050)	-.039* (.016)	-.044** (.025)
Crime Index	.001 (.001)	.003 (.006)	.004 (.006)	.006 (.007)
Province Control	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Pseudo R-Squared	0.0780	0.0786		
R- Squared within			0.0195	0.0196
R- Squared between			0.0395	0.0397
R-Squared overall			0.0274	0.0280

Notes: Significance: * 1%, ** 5%, ***10%

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