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journal homepage: www.elsevier.com/locate/econmod



## Kuznets curve in happiness: A cross-country exploration



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#### ARTICLE INFO

Keywords: Happiness Happiness-inequality Happiness Kuznets-curve

#### ABSTRACT

In the context of the recent emergence of enormous research and policy interest in the many dimensions of happiness, this paper explores for the first time a Kuznets-type relation between average happiness and happiness-inequality in a large cross-country setting. Three different data sets and several types of specifications are used. The study suggests three main points. First, in all cases there is a clear indication of an inverted-U relation in which happiness-inequality first increases with mean happiness, reaches a peak, and then declines. Moreover, the estimated turning-point occurs at a fairly "late" stage, and 35% to 40% of the countries lie in the increasing-inequality segment. Second, a possible policy implication is that there may be need to address accentuation of happiness-inequality at early stages of increase in average happiness. Third, the estimates indicate that the predominant sentiment in the literature toward a negative relation between mean happiness and happiness-inequality is probably based on oversimplified linear models.

#### 1. Introduction

There has recently been an enormous increase in the scholarly and policy interest in studies of happiness (or subjective well-being) of individuals and nations. This literature has been expanding at an extremely rapid rate and has considered numerous dimensions, including the meaning, conceptualization, measurement, correlates, determinants, and consequences of happiness.<sup>1</sup>

Relative to this vast literature, five aspects seem particularly relevant to the present study. First, besides several other scholars, Helliwell et al. (2016) have articulated the view that happiness is a more basic variable than income to reflect economic development and social well-being. Second, they (2016, pp. 29–32) have also persuasively argued that the distribution of happiness provides an "overarching measure of inequality" in just the same way as the average happiness provides an umbrella measure of well-being. Third, while the level of happiness has been given much attention along many dimensions, including the recent analysis by Helliwell et al. (2016, 2017), distribution or inequality of happiness has been studied to a limited extent even though a study of happiness-inequality might be deemed as important as that of its level. This is particularly so since income and

economic inequalities have recently been subjected to a huge amount of scholarship. Fourth, considering that average happiness in a nation provides a more inclusive measure of development than income, and happiness-inequality can be regarded as an overarching measure of inequality, it seems plausible and useful to postulate and explore a Kuznets-type (1955) quadratic relation between level of happiness and its inequality. Fifth, however, the vast literature on happiness has not explored such a relation. The nexus between level of happiness and its inequality has been studied largely through correlational or simple linear models, and, as reflected in the research by Goff et al. (2016), Helliwell et al. (2016) and Ott (2005), the predominant sentiment seems to be that the level and inequality of happiness are negatively related.

As is well known, Kuznets's (1955) postulate about a quadratic relation between level of income (development) and income inequality has been one of the most influential propositions in the literature on development and well-being of nations, and there are probably hundreds of studies that have considered the theoretical and empirical status of Kuznets-hypothesis. Since, as noted above, average happiness may be deemed to be a more refined measure of well-being and development than (mean) income, and happiness-

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<sup>&</sup>lt;sup>1</sup> Some indication of the huge surge in studies of happiness is provided by the observation that, as of May 2017, the World Database of Happiness (http://worlddatabaseofhappiness.eur.nl.) is stated to include a collection of 11324 publications in its bibliography of happiness-related topics and also to include 15079 happiness-related correlational findings reported in 1969 studies excerpted from 1513 publications. The policy significance of happiness is indicated by the observation that Gross National Happiness (GNH) proposed by Bhutan as an alternative to Gross National Product (GNP) has received considerable attention, and led to the UN General Assembly Resolution 65/309 titled "Happiness: towards a holistic approach to development" adopted on 19 July 2011 (United Nations, 2011). Also, in its resolution adopted on 28 June 2012, United Nations (2012) decided to proclaim 20 March as the International Day of Happiness. Following the surge in the interest in the topic, Sustainable Development Solutions Network published the first World Happiness Report in 2012.

<sup>&</sup>lt;sup>2</sup> The literature on Kuznets-hypothesis is immense. An arbitrary recent example is the study by Kennedy et al. (2017) who use a relatively refined test.

inequality is an "over-arching measure of inequality", it would seem natural and useful to make a transition from the Kuznets-hypothesis of an inverted-U relation between level of income (development) and income inequality to a similar relation between happiness and its inequality. The main purpose of this study is to postulate and explore a simple model of happiness-inequality along the lines of the Kuznets-quadratic in which happiness-inequality is anticipated to increase at early stages of increasing happiness, reach a peak, and then start declining. Such an exploration should be a useful supplement to the existing studies of happinessinequality. Although articulation of a tight reasoning is beyond the scope of this work, one can propose that early increases in happiness tend to accrue more to those who have higher levels of happiness, and it is only after a certain "watershed" has been reached that increased happiness is shared more by those who have a lower level. The suggested scenario appears plausible in a manner similar to that postulated by Kuznets (1955) for income and subsequently rationalized by several scholars through various types of arguments.

Three country-level data sets on mean and standard deviation of happiness are used for the exploration along with simple specifications that permit a linear as well as a quadratic structure for the relationship. In contrast with the widely-shared paradigm of a negative relation, the estimates support a quadratic structure in which happiness-inequality first increases with an increasing mean, and it is only after the mean has reached a sizable level that its increase lowers inequality. The sentiment in favor of a monotonic negative relation is probably based on a simplified linear structure.

The next section provides brief observations on selected studies that primarily address significant issues relating to happiness-inequality. Section 3 describes the simple model and the data. Section 4 provides the main results. Section 5 contains observations on a few related aspects, and the last section contains some concluding thoughts.

## 2. Brief observations on selected studies dealing with happiness-inequality

From the immense literature on happiness, this section provides brief description of a few selected studies that primarily address issues relating to happiness-inequality. The intent is mainly to indicate a little more clearly the usefulness of exploring a Kuznets-type quadratic relation between happiness and its inequality.

Although the focus of this section is on happiness-inequality, a few studies dealing with the correlates of happiness may be noted. At the country level, World Happiness Reports have identified six major variables that explain nearly 75% of the variation in average happiness. As in the previous reports, the 2017 Report (p. 16), describes the six variables as GDP per capita, social support, healthy life expectancy, freedom to make choices, generosity, and perceptions of corruption. At the individual level, out of the numerous correlates of happiness or subjective well-being (SWB), income has received the most attention. Besides other scholars, Frey and Stutzer (2002), Arthaud-Day and Near (2005), and Clark et al. (2008) have articulated the importance of "relative income", which refers to the individual's perception of his income relative to that of a reference group. Thus one's happiness depends on own income and also that of the reference group. Moreover, to the extent that the reference group may be as large as the country, the individual's happiness would depend on own income and on the average income in the country.

Helliwell et al. (2016) and Goff et al. (2016) have suggested that an individual's happiness may depend on inequality of income as well as the inequality of happiness in the society.

There is some descriptive literature on variations in happiness-inequality. For instance, Veenhoven (2005) indicates decline in dispersion of happiness in EU nations from 1973 to 2001. He also stated (2005, p. 457) that comparison across 80 nations in the 1990s shows lower dispersion "in the most modern countries". Dutta and Foster (2013) use a dominance-based approach to study happiness-inequality in the United States, and find that the 1990s dominate the other decades in having the lowest inequality. By traditional measures, they find a decline in happiness-inequality through the 1990s and 2000s. In a much broader and more interesting context, Helliwell et al. (2016, pp. 36–41) report a significant increase in inequality of happiness in the world from 2005–2011 to 2012–2015, which was observed for more than half of the 149 countries.

At a somewhat different level, Apergis and Georgellis (2015) studied happiness-convergence across Europe and found "convergence clubs". They adapt the economic concept of "convergence" of income across countries to happiness research, and suggest that happiness-convergence, which implies a decline in the dispersion of (average) happiness *across* countries, to be a legitimate policy goal in Europe.<sup>3</sup>

Among the correlates and determinants of happiness-inequality, average happiness has been noted by several scholars, and is particularly relevant to the present study. For example, in one of the early studies on the topic, Ott (2005) related average happiness with its standard deviation for 78 countries around the year 2000 and reported a "strong negative correlation". In a more recent work (Ott, 2011), he worked with a larger sample of 130 nations and stated that "good governance" fosters higher level and greater equality of happiness, which too implies a largely negative correlation between the level of happiness and its inequality. Helliwell et al. (2016) and Goff et al. (2016) also report a negative correlation between the level of happiness and its inequality. For the United States, Owen and Phillips (2016) indicate that "subjective life satisfaction of the least-satisfied does not increase in equal proportion with the average life satisfaction of the society, suggesting that increasing satisfaction levels are likely to lead to greater life satisfaction inequality." However, the life-satisfaction of the poorest and the least educated is stated to increase in equal proportions with average life satisfaction. In a cross-country study, Ovaska and Takashima (2010) report "the inequalities in individual incomes and quality of health, and the level of institutional qualities to be most important in explaining the inequalities of well-being". Based on data for 119 countries, Berg and Veenhoven (2010) indicated that "Spread of happiness tended to be larger in income unequal nations, but this effect disappeared when wealth of the nation was controlled".

Van Praag (2011) has proposed an interesting theoretical framework in which the importance of reference groups is suggested for defining and understanding individual and social dimensions of levels and inequalities of subjective well-being. As the author acknowledges, the current empirical applicability of the suggested insight seems limited.

Gandelman and Porzecanski (2013) compared, for a large number of countries, income-Gini with happiness-Gini to verify whether their theoretical expectation of happiness-Gini being smaller is observed empirically. They found that happiness-inequality is about one-half of income inequality. They also noted that if, as many economists believe, one particular measure of relative risk aversion exceeds one, a large part of happiness-inequality would not be related to pecuniary dimensions of life.

The foregoing narrative indicates that useful work has been

<sup>&</sup>lt;sup>3</sup>Convergence of income (and other variables) has been studied extensively by economists, and several different approaches have been adopted to conceptualize and test it.

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