

DETERMINANTS OF HAPPINESS IN INDIA: TIME SERIES ORDERED PROBIT ESTIMATION OF SUBJECTIVE WELL-BEING

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Abstract *Attaining the highest level of happiness is the utmost concern of individuals as well as the nations and the whole human society. Individuals feel happiness can be achieved by acquiring income and material perquisites. Though wealth and happiness are positively correlated within a society at a given point of time, in the long run, increasing the income of all in a country may not raise the happiness of all. This lack of a systematic long-run relationship between income and happiness is often due to social comparison, in which individuals evaluate their life satisfaction relative to others' income. Using the WVS data for eight states of India for the period 1990–2006, this paper examines whether individuals' happiness or life satisfaction is influenced by their absolute income or by relative income. The estimated ordered probit results show that relative income matters more than individual absolute income for the happiness of individuals. An improvement in the income rank of an individual relative to the reference group will increase the individual happiness level. The results are consistent with the Easterlin paradox that social comparison explains the null income-happiness relationship in the long run and only relative income/position matters for happiness more than absolute income.*

Keywords: *Subjective Well-Being, Income Effect, Social Comparison, Reference Income, Absolute vs Relative Income, Income Rank, Ordered Probit Estimation*

INTRODUCTION

Attaining the highest possible happiness is the utmost concern of both individual humans and human society. Happiness, as defined by the Cambridge Advanced Learner's Dictionary, is generally understood as a state of mind or feeling characterized by contentment, love, satisfaction, pleasure, or joy in life. As happiness is a state of feeling that encompasses all aspects of human life, a wide variety of biological, psychological, social, religious, and philosophical approaches have striven to define happiness and identify its sources. Economics measures human well-being in terms of utility, progress, welfare, quality of life, well-being, or standard of living, mostly relating well-being to consumption, income, GDP, growth in GDP, economic growth, per capita income, or some other indicators like maximum utility, reduction in poverty, decrease in inequality, indicators of health, or indicators of environmental standards. Economics reduces happiness to yet another aspect of human behaviour that is related to material goods and services in that command over physical resources, simply money buys human happiness.

But, psychologists frequently measure happiness by subjective well-being by self-reported levels of subjective life satisfaction. Positive psychology researchers use theoretical models that include describing happiness as consisting of positive emotions and positive activities, or that describe some kinds of happiness: pleasure, engagement, and meaning. While economists are concerned with objective measures of well-being, psychologists rely on self-reported subjective evaluations of life satisfaction. Research has identified a number of attributes that correlate with happiness: personal relationships, social interaction, extraversion, marital status, employment, health, democratic freedom, optimism, endorphins released through physical exercise and eating chocolate, religious involvement, income and proximity to other happy people. Frey and Stutzer (2002) argue that "happiness is a 'subjectivist' measure of individual welfare and is much broader than the way individual utility is normally defined... while happiness is not derived from actual behaviour, it is systematically and closely connected with generally accepted manifestations of well-being". Therefore, happiness, subjective well-being

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and life satisfaction are commonly and interchangeably used to refer to the same thing, general human well-being.

A fundamental assumption of standard economic analysis is that people's well-being increases with consumption. Consumption is the most important argument in the utility function used by economists in order to capture the extent to which consumption translates into the well-being of an individual. It is primarily due to this assumption that GDP is so often taken as the yardstick of well-being and progress. More systematic evidence of the limitations of using GDP as a yardstick for well-being comes from more direct indicators of quality of life (Easterlin & Angelescu, 2010). Given the myriad issues surrounding the economic measures such as welfare that try to quantify happiness, the recent trend to use direct measures of happiness, such as survey tools asking people to self-evaluate how happy they are, challenges traditional income indicators like GDP. Some of these indicators are objective (increases in nutrition or life expectancy increase quality of life, while increases in crime rates or congestion decrease it), others subjective (self-reported status of well-being by people in surveys of happiness, life satisfaction, or prevalence of positive moods). As the objective function of a government is increasing people's well-being, it is argued that government policies should focus, once basic needs are met, on increasing Gross National Happiness (GNH), not on simply economic growth or GDP. In fact, Gross National Happiness is a concept introduced by the King of Bhutan as an alternative to GDP.

The general conclusion on the income-well-being relationship is that while cross-country data shows a correlation between GDP per capita and objective indicators of quality of life (for example, richer countries tend to have higher life expectancy), time-series data provides very little support for GDP per capita causation of improvements in the objective indicators (for example, in a large number of countries the turning point towards sustained economic growth anteceded by many decades of sustained improvements in life expectancy). A comprehensive and systematic cross-country and time-series study by Easterly (1999) on the relationship between GDP growth and improvements in objective indicators of well-being finds that there is an only robust indication that GDP growth was the prime cause for the improvement in three out of possible 81 indicators (calorie intake, protein intake, and telephones). In addition, the evidence shows that growth comes along accompanied by objective indicators of some bad or negative factors that lower the quality of life, such as higher levels of pollution and, beyond a certain income threshold, dietary habits that increase obesity. Thus, income growth also brings with it consumption that tends to lower well-being.

As well-being is multidimensional, conceptualizing well-being in a more holistic way goes beyond the GDP stance. One adjustment to GDP is to allow purchasing power parity

among countries, and another, further adjustment to GDP to include differences in income distribution, for example, by providing weighted shares of growth by population groups, as income per capita as a national average does not provide the real income picture of the different population subgroups or regions. Yet, another approach is to construct objective measures to complement GDP that include social and environmental information beyond the economic realm. Since the 1970s many non-economic indicators have been developed to complement GDP, like HDI, which encompasses education, health and nutrition, environment and empowerment and participation to complement GDP. Another approach is to adjust GDP by monetizing different aspects that are not counted in the GDP measurement, like social and environmental factors (McGillivray, 2007). The problem with these adjustments is that it is difficult to quantify and monetize some of these additional factors. Even more complex adjustment is, for example, to take into account social and environmental factors such as the value of leisure or the damage of pollution (Nordhaus & Tobin, 1973). Beyond adjusting GDP, like the Physical Quality of Life Index (PQLI) UNDP's Human Development Index (HDI), World Bank's Genuine Savings, Happy Planet Index, Happy Life Years (Veenhoven, 1984; 2004), etc., try to construct composite measures that would capture the multidimensional aspect of well-being.

Beyond the income measure, economic freedom, democracy, federalism and political participation are also found to correlate strongly with happiness (Frey & Stutzer, 2001). A more active role for citizens enables better monitoring of government and politics by citizens, which leads to greater satisfaction with government output. Also, the ability for citizens to get involved in and have control over the political process increases well-being. According to Glaeser et al. (2016), though humans constantly strive to make themselves happy, the choices that they make tend to decrease their happiness, because they have also other important aims that clash with the aim of happiness and choices are made under certain constraints. Ultimately all the economic and social policy should be diverted toward what matters most, the people's well-being.

Thus, well-being is one of the more elusive concepts of economic research and hence an understanding of the relationship between economic growth and happiness is warranted. While objective measurement of happiness presents challenges, subjective measures like self-reported life satisfaction levels, the tools developed by surveys like the World Values Survey and Gallup world poll are frequently used by researchers to quantify happiness. Using such a subjective measure of well-being, this paper analyses the relationship between life satisfaction and income in India. The specific objectives of this paper are to identify and estimate the effects of absolute income and relative income on the level of happiness, i.e. to explain how much

a person's happiness depends on his/her income in absolute terms and in relation to the income of others. This paper also tests if the rank position of an individual in the income order is significant in explaining the satisfaction level and estimating the level of its effect. This paper further attempt to estimate how large is the effect of income on happiness compared to the effects of non-pecuniary factors such as personal relationships, employment, health, etc.

THE EASTERLIN PARADOX

The Easterlin Paradox is a key concept in happiness economics. Subsequent cross-country analyses also Easterlin fails to find a strong association between income and happiness across countries though within the country there is a positive happiness-income relationship (Easterlin, 1974; 1995). The stylized finding of the literature on the Easterlin paradox can be summarized as: At a point in time both among and within nations, happiness varies directly with income, but over time, happiness does not increase when a country's income increases; no long-run relationship between income and happiness; and economic growth in nations does not buy greater happiness for the average citizen over time. Subsequent studies show that challenged the Easterlin hypothesis to find some evidence of a positive relationship between average income and happiness (Layard, 2005; Stevenson & Wolfers, 2008; Deaton, 2008; Clark, Frijters & Shields, 2008; Sacks et al., 2012; 2013). The stylized findings of this literature are: The nil relationship between economic growth and happiness does not actually imply the absence of a relationship between the two; there exists a statistically significant positive long-run relationship, at least the relationship does not become zero, and the time-series income-happiness relationship is generally weaker in the developed countries, but generally stronger in the developing countries.

In contrast to the absolute income vs relative income models, some researchers use the rank-based model which suggests that people gain utility/satisfaction from occupying a higher-ranked position within an income distribution rather than from either absolute income or their position relative to a reference income (Smith et al., 1989; Hagerty, 2000; Brown et al., 2008; Clark et al., 2009; Clark et al., 2010). The ranked position of an income will be highly correlated with the position of that income relative to a mean, so a reference-income account may be consistent with a rank-income account. According to the rank-income hypothesis, there is no simple causal relationship between money and happiness: an increase in income need not increase ranked position and hence need not increase happiness. Clark et al. (2009), in a study of 9,000 small neighbourhoods, find that satisfaction with economic conditions increased with ranked position within a neighbourhood. Brown et al. (2008)

observe in a study of 16,000 British workers, that wage satisfaction depended on the ordinal rank of an individual's wage within a workplace. Boyce et al. (2010) test the rank income hypothesis using the 1997–2004 British household panel survey with 86, 679 observations and observe that relative rank income positively predicts life satisfaction, and subsumes the effect of absolute income in Britain. Further, they show that satisfaction is gained for better-than comparison and lost for worse than comparison. Other studies have considered rank in the broader context of range-frequency theory (Hagerty, 2000; Smith et al., 1989).

Analysing the nil effect of income on happiness in the US, Graham (2017), in her book '*Happiness for All*' concludes that Americans appear to be less happy than people from other countries. Most sub-groups of American people face a downward trend in happiness levels. In a developed country like America, if people appear to be in greater pain, then what will be the actual determinant of happiness? Graham gives a more psychological explanation for this phenomenon. Her major findings are that mental well-being in the US has become unequal, American people are suffering from a lack of hope, white Americans are less optimistic than black Americans, poor Americans have more stress, pain and lower life satisfaction, and low life satisfaction in the areas where income inequality is high, and Americans lost confidence. In fact, revisiting his paradox in the US and countries worldwide, Easterlin (2017; 2021) also confirm that the long-term trends in growth rates of happiness and real GDP per capita are not significantly positively related, concluding that the puzzle is still alive. A large body of empirical evidence has shown that social comparison might be the solution to the Easterlin's income-happiness puzzle. A large body of empirical evidence has shown that social comparison might be the solution to the Easterlin's income-happiness puzzle (Luttmer, 2005; Clark et al., 2008; Boyce, 2010; Paul & Gullibert, 2013; Budria, 2013; Graham, 2017; Clark, 2018; Budria & Ferrer-i-Carbonell, 2019; Oishi et al., 2020).

Though some cross-country studies include India also in their analysis, most studies are either psychological or simple correlational analyses. The causal impact of income on happiness in India is never fully understood. Few cross-country studies include India in their data set (Inglehart et al., 2008; Deaton, 2008; Easterlin & Swangfa, 2010; Biswas-Diener et al., 2012). Carlsson et al. (2009), putting hypothetical preferences over various absolute and relative income choices, find that half of the income effect on well-being is determined by some kind of status concerns and lower caste or low-income people are more sensitive to relative income. Most importantly, the relative income effect is consistent with that of developed countries.

Lakshmanasamy (2010) is the first attempt to examine the Easterlin paradox in the Indian context. For primary survey

data, the ordered probit estimation of the relationship between income and happiness in India shows a significant positive effect of both absolute income and relative income on happiness. However, the relative income effect vanishes when interactions between absolute income and relative income are allowed. Thus, as the Easterlin paradox holds, a proportionate shift in the relative position does not change the happiness level. Another study by Majumdar and Gupta (2015) examines several correlates of happiness such as unemployment, poverty, literacy rate, life expectancy, inflation rate, crime rate and political stability at the aggregate level. They find that employed are more satisfied than unemployed, married people are happier than divorced, separated and widowed, etc. Further, it is shown that the Easterlin Paradox does not hold for India as happiness is found to be more sensitive to absolute than relative income. Focusing on consumption rather than income, Linssen et al. (2011) examine happiness among Indian rural poor, using 2008 primary data from Orissa consisting of 697 individuals within 375 households. Applying linear multilevel regressions, the study finds insignificant effects of absolute and relative consumption on subjective well-being, but a significant negative effect of status intensive goods consumption on subjective well-being.

Borooah (2006) conducts an econometric investigation into what makes people happy in Ireland by examining the relationship between standards of living and levels of happiness. The results show that money does not buy happiness and money may not even be fully convertible in terms of the satisfaction of having money. The satisfaction of one's standard of living depends on comparison with the standard of living of others, a relative income effect. Further, the study importantly reveals the significance of social capital, the area we live in, and the people we have as our neighbours are very important in lifting happiness levels. On the other hand, Litchfield et al. (2012) studying life satisfaction in Albania using the heteroscedastic ordered probit model find that a measure of absolute household welfare is important for life satisfaction, but there is no role for a relative measure.

Yushkina (2010) study the determinants of life satisfaction and its changes in modern Russia. The effects of living space, perceived economic rank, other subjective attitudes and perceptions on well-being are analysed for panel data applying the ordered logit model. The factors subjective attitudes that describe an individual's perceived power rank, respect rank and economic value in society are shown to have consistently positive significant effects on happiness.

Hajdu and Hajdu (2014) evaluate different econometric methodologies in explaining the association between subjective well-being and income. The OLS regression is compared with quantile regression and the ordered probit model with the generalised ordered probit model. The results show that income has a positive impact on satisfaction under

OLS regression and this association is not so strong at the upper end of the conditional distribution of life satisfaction and stronger at the lower end. The ordered probit model predicts a moderate positive income effect: higher income decreases the probability of dissatisfaction and increases the probability of satisfaction. Contrary to this result, the generalized ordered probit model shows a more negative effect of income on the probability of lower levels of satisfaction, but income does not affect the probability of the highest satisfaction.

Lakshmanasamy (2020) estimates the differential effects of income on happiness and the heterogeneity in the income–life satisfaction relationship at specific locations of subjective well-being distribution applying the panel quantile regression method to the WVS data for India. The descriptive analysis of well-being distribution across states shows heterogeneity in the income–well-being relationship between states and individuals within states. The across-states over-time panel quantile regression results reveal that estimation of average effect only provides an incomplete picture of the effect of income at both ends of the conditional distribution of well-being indicators, life satisfaction and happiness levels. The quantile regression estimates vastly differ not only from the mean estimates but also across quantiles. Life satisfaction falls and happiness rises with an increase in average state income and the income effect is strong at the lower end than at the upper end of subjective well-being distribution.

Lakshmanasamy and Maya (2020) examine the income-happiness gap in India and the relevance of the social comparison applying the ordered probit regression method on the WVS data. To overcome the twin issues of the identification of relevant reference groups and the estimation of the differential effects of comparison income, they use an ordinal comparison income approach based on rich/poor dichotomy and rank income. The rank income of an individual is defined as his relative position in the income distribution within the reference group and the average income of the reference group is used to define the rich/poor classification. The differential effects of ordinal incomes across life satisfaction distribution are estimated by the panel fixed effects ordered profit regression model. The estimated results show that ordinal income comparison, rather than cardinal average reference income, is a better predictor of life satisfaction levels. Raising income level is relatively important for less satisfied people while increasing rank status is important for highly satisfied people in India.

The literature on happiness has grown a lot since Easterlin's (1974) seminal findings. Several surveys and reviews on happiness research have indicated a number of correlates of happiness. World database of happiness lists hundreds of correlates of happiness identified by research. Many of such findings remain controversial. Central to all such studies of

happiness and well-being is the role of income. Different schools of thought have evolved and empirical studies struggle to identify the relevant concept of income - absolute income, relative income and rank income, and establish the exact relationship between happiness and income. Taking all evidence together from all sides on whether income and happiness are directly or inversely related to happiness, it is somewhat clear that all these studies show that the concern in the economics of improving human welfare through greater material wealth is exaggerated, at least in economically developed countries.

MATERIAL AND METHOD

This paper uses the World Values Survey (WVS) data, the largest source of the cross-national survey in the world on happiness. Since its beginning in 1981, seven waves of surveys have been conducted between 1981 and 2021 covering large samples across the globe. The WVS covers close to 97 societies from all six continents constituting 88% of the world population. The WVS contains a wealth of information on socio-cultural-political-religious values and beliefs, including self-reported subjective well-being indicators, happiness and life satisfaction levels of people. Being a part of the WVS Association, India has been surveyed since the second wave (1990). India did not take part in the 2017–2021 seventh wave survey. Hence, the WVS data on India are available only up to the sixth wave of 2010–2014.

The WVS has started the survey in India in 14 major states with a 2400 sample size, covering more than 90% of the population and the sixth wave was conducted in 22 states with a sample size of 4078 respondents. In total, there are more than 10,000 observations in the WVS of India. Using the World Values Survey database for the period 1990–2006 for eight states of India and applying panel econometric methods, this paper analyses the effect of per capita state income on the average level of happiness in the states of India. The eight states considered are Andhra Pradesh, Gujarat, Karnataka, Kerala, Maharashtra, Rajasthan, Tamil Nadu and West Bengal. The four waves of the WVS in 1990, 1995, 2001 and 2006 consist of 2807 observations. Only these four waves and eight states are considered as these states are continuously surveyed in all the four waves. With regard to the income variables, the Net State Domestic Product per capita (NSDP) data of the states are derived from the RBI's Handbook of Statistics on Indian Economy.

In the WVS, the happiness question asks respondents to evaluate their present life on a 4-point scale: “Taking all things together, would you say you are... very happy, quite happy, rather happy and not at all happy.” The life satisfaction question asks for an evaluation of an individual’s whole life: “All things considered, how satisfied are you with your life as a whole are these days?” for which

respondents self-select a value on a 10-point scale, starting with dissatisfied and ending with satisfied. In the happiness literature, the terms subjective well-being, life satisfaction and happiness are interchangeably used to represent the same construct, and there is a high correlation between them. The life satisfaction indicator is often used in the empirical analysis as its response scale is large in number. While life satisfaction has a slight advantage as it encompasses the whole life, happiness, being a feeling, may mean instantaneous or momentary gratification to the respondents (Di Tella & MacCulloch, 2006). Following the literature, this paper also uses life satisfaction in lieu of happiness as measuring subjective well-being.

Ordered Probit Regression Method

Since individuals' self-rating of their overall life satisfaction is measured by an ordered categorical variable, the empirical estimation of subjective well-being is based on the ordered probit model. Ordered response data are mutually exclusive qualitative categories that have a natural ordering, but they do not have natural numerical values. Ordered probit is a generalisation of the probit analysis, used for the ordinal multinomial dependent variable in which the probabilities of each outcome conditional on the independent variables are modelled using the cumulative normal distribution. The assumption underlying the ordered probit model is that, although the respondents to the WVS report their happiness levels on the prescribed 1 through 10 integer scale, happiness can be measured by an unobserved (or latent) variable that can take on any real value. Therefore, the ordered probit model is based on the underlying model with a single index function and constant thresholds.

Let y be an ordered response of happiness, and happiness is rated on a scale from 1 to 10, with $y = 10$ representing the highest rating i.e. most satisfied, and $y = 1$ the lowest rating, i.e. least satisfied. The fact that 10 is a better rating than 9 conveys useful information, even though the happiness rating itself only has an ordinal meaning. Therefore, y is an ordered response taking on the values $\{1, 2, \dots, 10\}$ for some known integer J . Then, the ordered probit model for y (conditional on explanatory variables) can be derived from a latent variable model. Assume that a latent variable y^* is determined by:

$$y^* = \beta x + u | x \sim N(0, \sigma^2) \quad (1)$$

As y^* is unobserved, the observed y can be expressed as

$$\begin{aligned} y &= 1 \quad \text{if } y^* \leq c_1, \\ y &= 2 \quad \text{if } c_1 \leq y^* \leq c_2, \\ &\dots\dots\dots \\ y &= 9 \quad \text{if } c_8 \leq y^* \leq c_9, \\ y &= 10 \quad \text{if } y^* > c_9. \end{aligned} \tag{2}$$

The c 's are the unknown threshold levels (cut points) to be estimated along with the probabilities. Given the assumption that the error term u is distributed normally, the conditional distribution of y given x is derived as the response probability for each y :

$$\begin{aligned} P(y = 1|x) &= P(y^* = c_1|x) = P(\beta x + u \leq c_1|x) = \Phi(c_1 - \beta x) \\ P(y = 2|x) &= P(c_1 \leq y^* \leq c_2|x) = \Phi(c_2 - \beta x) - \Phi(c_1 - \beta x) \\ &\dots\dots\dots \\ P(y = 9|x) &= P(c_8 \leq y^* \leq c_9|x) = \Phi(c_9 - \beta x) - \Phi(c_8 - \beta x) \\ P(y = 10|x) &= P(y^* \geq c_9|x) = 1 - \Phi(c_9 - \beta x). \end{aligned} \tag{3}$$

In probability, these sums to unity, and hence when $J = 1$, the binary probit model is given by:

$$P(y = 1|x) = 1 - P(y = 0|x) = 1 - \Phi(\alpha_1 - \beta x) = \Phi(\beta x - \alpha_1) \quad (4)$$
$$P(y = j|x) = \Phi(\alpha_j - \beta x) - \Phi(\alpha_{j-1} - \beta x), \quad (5)$$
$$L(\alpha, \beta) = 1(y=0)\log[(\Phi(\alpha_1 - \beta x))] + 1(y=1)\log[(\Phi(\alpha_2 - \beta x))] + 1(y=2)\log[(\Phi(\alpha_2 - \beta x))] + \dots + 1(y=10)\log[(\Phi(\alpha_{10} - \beta x))]. \quad (6)$$
$$\ln L = \sum_{i=1}^n \sum_{j=1}^J I(y_j = j) \log [\Phi(\alpha_j - \beta x) - \Phi(\alpha_{j-1} - \beta x)] \quad (7)$$
$$y_{it} = x_{itk}\beta_k + u_{it} \quad (8)$$
$$y_{it} = \beta_1 \ln(absy_{it}) + \beta_2 \ln(rely_{it}) + x_{itk}\beta_k + u_{it}, \quad (9)$$

The paper also tests the rank income happiness model, according to which individuals compare their rank position with others within the income distribution. The number of people who have income ‘worse than’ that of the individual ($i - 1$) is compared with the total number of people within the individual’s reference group, i.e. the state ($n - 1$). The ratio gives the individual a rank (R_i) normalised between 0 and 1,

$$R_i^s = (i - 1)/(n^s - 1) \quad (10)$$

EMPIRICAL RESULTS

This paper starts by examining the relationship between individuals' reported happiness in the eight states of India and the state income per capita (NSDP). Table 1 presents the distribution of samples across states over the four waves of WVS during 1990–2006 in India.

Table 1: Distribution of WVS Samples across the States of India

State	1990	1995	2000	2006	Total
Andhra Pradesh	134	136	25	143	438
Gujarat	92	73	6	97	268
Karnataka	93	64	3	102	262
Kerala	70	67	13	56	206
Maharashtra	169	135	15	196	515
Rajasthan	94	58	12	112	276
Tamil Nadu	143	51	33	161	388
West Bengal	140	155	4	155	454
Total	935	739	111	1022	2807

Table 2 represents the distribution of happiness in the eight states. It is observed that, out of 2807 sample, 703 people have indicated their happiness level as 5, i.e. neither most satisfied nor least satisfied, 1596 people have indicated their happiness level above 5 and the rest have satisfaction level below 5. Thus, on average, the majority of people in the states of India during 1990–2006 are satisfied with their life, reporting between 5 and 7 happiness levels. But, there also exists a differential in happiness between the states. In Gujarat, more than 20% are most happy or satisfied with their life, whereas in West Bengal only 5% are most happy. Relatively, more people in Andhra Pradesh and Gujarat, states with higher NSDP and per capita income are least satisfied, whereas in Rajasthan, a less income state, only a few people are less satisfied and the majority of people in West Bengal are at a level 5. While most states have more or less the same percentage of people who are most satisfied, Kerala, the highly literate state, has the least number of most satisfied people.

Table 2: Distribution of Happiness across the States of India

Happiness Level	AP	Gujarat	Karnataka	Kerala	Maharashtra	Rajasthan	Tamil Nadu	West Bengal	Total
1	22	13	7	2	11	7	3	65	130
2	2	0	4	2	10	0	2	7	27
3	36	17	45	12	36	12	18	77	253
4	13	3	24	4	18	3	16	16	97
5	103	40	80	41	148	67	75	149	703
6	25	21	20	57	18	21	19	36	217
7	91	44	21	40	96	68	103	33	496
8	44	36	13	6	62	40	52	26	279
9	44	26	9	9	51	12	31	19	201
10	58	68	39	33	65	46	69	26	404
Total	438	268	262	206	515	276	388	454	2807

Table 3 represents the average level of happiness and average income in the eight states. The mean happiness is highest in Gujarat, whereas the lowest average happiness is reported in West Bengal. The least per capita income state, Rajasthan, has mean happiness higher than Andhra Pradesh and West Bengal, the higher income states. Thus, there are variations in mean happiness across states in India with similar income per capita.

Table 3: Average happiness and NSDP Per Capita across States of India

State	Mean Happiness	NSDPpc	lnNSDPpc
Andhra Pradesh	5.56 (1.890)	26226	10.17
Gujarat	7.27 (2.714)	32991	10.40
Karnataka	6.19(2.862)	29185	10.28
Kerala	6.29 (2.223)	32450	10.39
Maharashtra	6.28 (2.291)	36048	10.49
Rajasthan	6.08 (2.394)	17997	9.80
Tamil Nadu	6.58 (2.178)	31663	10.36
West Bengal	4.57 (1.650)	24533	10.11

Note: Standard deviations are in parentheses.

In the empirical analysis of the ordered probit model, the life satisfaction level is the dependent variable. The explanatory variables are defined as given in Table 4. Two income measures absolute income and relative income are considered explanatory variables with other control variables.

Table 4: Description of Variables

Variable	Description
Happiness	Life satisfaction rating 1 (least satisfied) to 10 (most satisfied) (item al70)
Income	ln(absy)
	Log of individual absolute income (itemX-047cs)
Income	ln(rely)
	Log of relative income, the ratio of individual income to the average income of the state
Marital status	Partner
	Marital partner present = 1, 0 otherwise (itemX007)
Marital status	Split-widow
	Separated/widowed = 1, 0 otherwise (itemX007)
Sex	Female
	Female = 1, 0 otherwise (itemX001)
Age	Age in years (itemX003)
Children	kid1
	One child = 1, 0 otherwise (itemX011)
Children	kid2plus
	More than two children = 1, 0 otherwise (itemX011)
Occupation	Retired
	Retired = 1, 0 otherwise (itemX028)
	Unemployed
	Unemployed = 1, 0 otherwise (itemX028)
Occupation	Housewife
	Housewife = 1, 0 otherwise (itemX028)
Occupation	Student
	Student = 1, 0 otherwise (itemX028)
Health	Health status 1 (least healthy) to 5 (most healthy) (itema009)
Religion	Religion 1 (least important) to 10 (most important) (itemf063)
No. of observations	2807

The estimated coefficients of the ordered probit model are presented in Table 5. The relative income effect is significantly positive showing that an increase in the relative income of an individual will increase the probability of happiness by 0.17. An increase in individual income in relation to the state average income increases the probability of reporting higher satisfaction. The effect of absolute income on happiness is negative, but not statistically significant. Hence, people in India are more concerned with relative income than with their absolute income. This is also supported by the significantly high correlation (0.93) between ln(absy) and ln(rely). The coefficients of marital status show that married people, living with partners as well as separated and widowed, are less happy than single people, but these results are statistically insignificant. Females are happier than males, and age reduces happiness. Children make people happy and having more than two children makes people more than doubly happy, and the latter is statistically significant. This shows the significance of the value attached to having children in India. The coefficients

of all the occupation dummies are negative and statistically significant showing that working individuals, employed or working as part-time or self-employed, are happier than those who are unemployed, retired or housewife. This finding is in line with many studies that find a negative relationship between unhappiness and unemployment. More healthy people are happier than least healthy individuals and the estimated coefficient is positive and statistically significant. Similarly, religious people are happier than people who give less importance to religion.

Table 5: Ordered Probit Estimates of Happiness in India
Dependent Variable: Happiness Level

Variable		Coefficient	Standard Error	P-Value
Income	ln(absy)	-0.005	0.034	0.882
	ln(rely)	0.1659**	0.034	0.000
Marital status	Partner	-0.081	0.062	0.194
	Splitwidow	-0.094	0.119	0.429
Sex	Female	0.004	0.041	0.930
Age		-0.001	0.007	0.429
Children	kid1	0.132	0.090	0.144
	kid2plus	0.339**	0.072	0.000
Occupation	Retired	-1.47**	0.111	0.000
	Unemployed	-0.153*	0.060	0.011
	Housewife	-0.963**	0.057	0.000
	Student	-0.509**	0.080	0.000
Health		0.472**	0.0245	0.000
Religion		0.061**	0.007	0.000
Log-likelihood		-5247.434		

*, ** denote the significant levels at 1 and 5%, respectively.

Table 6 represents the effects of rank position within the reference group on happiness in India. The estimated coefficient shows that as the rank of a person within his reference group increases his happiness level also increases by 1.82 times, and such an effect is statistically significant at 1% level. Thus, people do compare their status position with some reference group. Individuals will report higher satisfaction levels to the extent that they perceive themselves as ranking higher in happiness relative to others.

Table 6: OLS Estimate of the Effect of Income Rank on Happiness in India Dependent Variable: Happiness Level

Variable	Coefficient	T-value	R ²	N
Income rank (by reference group)	1.8238	7.77*	0.382	1022

*Significant level at 1%.

CONCLUSION

Pursuing economic growth alone, though remains the key political goal, might not make people in a country happy. Increasing the income of all may not raise the happiness of all, even though wealth and happiness are correlated within a society at a given point in time. Based on WVS data for eight states for the period 1990–2006, on the question of whether individual's self-reported happiness or satisfaction is influenced by their absolute income or by relative income, the estimated ordered probit results of this paper show that relative income matters whereas individual absolute income does not affect the happiness level. Also, an improvement in the rank position of an individual over the reference group will increase his/her happiness level. Thus, the findings of this paper are consistent with the Easterlin paradox that relative income/position matters for happiness more than absolute income.

The finding of this paper that people are not concerned much about their absolute income suggests that a distribution-neutral increase in average income will not change the happiness level; when everybody's income is increased, on average, individual happiness will remain at the same level. The finding that people care much about their relative income/position suggests that if some people's income grows more slowly than others, the relative loser will end up feeling worse off. Hence, in this sense, any unequal increase in income will lead to unequal changes in happiness level on average. The policy implication of this study is that governments should focus on reducing income inequality rather than increasing the net income and reducing the individual emphasis on money and relative comparison.

Increasing the earning capabilities of the bottom poor, albeit holding down the spread of inequality, and reducing the status-consciousness of the top rich in India may reduce materialist aspirations and the income–life satisfaction gap. When the income of the top income group grows much faster than the rest causing rising income inequality in India, subjecting the top income earners to progressive tax and expanding social safety measures and aiding with more monetary benefits to the poor is a plausible practical policy strategy. The reliance on material well-being as social status needs to be replaced with a social life with concerns for valuable life pursuits like love, beauty, education, career, health, friendship, conscience, knowledge, civic spirit, and so on may form the basis for a meaningful happy and satisfying life.

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