

DISCUSSION PAPER SERIES

IZA DP No. 11099

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Bert Van Landeghem

University of Sheffield, University of Maastricht and IZA

Anneleen Vandeplass

LICOS, KU Leuven and European Commission

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ABSTRACT

The Relationship between Status and Happiness: Evidence from the Caste System in Rural India*

A large number of empirical studies have investigated the link between social status and happiness, yet in observational data identification challenges remain severe. This study exploits the fact that in India people are assigned a caste from birth. Two identical surveys of household heads (each with N=1000) in rural Punjab and Andhra Pradesh show an increasing pattern in economic welfare across the hierarchy of castes. This illustrates that at least in rural regions, one's caste is still an important determinant for opportunities in life. Subsequently, we find that the castes at the top are clearly more satisfied than the lower and middle castes. This result, which is in line with predictions of all major social comparison theories, is robust across the two case studies. The pattern across low and middle castes, however, is less clear, reflecting the complex theoretical relationship between being of middle rank on the one hand, and behaviour, aspirations and well-being on the other hand. In the Punjab sample, we even find a significant U-shape, the middle castes being the least happy. Interestingly, these patterns resemble those found for Olympic Medalists (first documented by Medvec *et al.* 1995).

JEL Classification: I31, C1, O12

Keywords: subjective well-being, happiness, social status, social comparison

Corresponding author:

Bert Van Landeghem
Department of Economics
University of Sheffield
9 Mappin Street
Sheffield S1 4DT
United Kingdom

E-mail: b.vanlandeghem@sheffield.ac.uk

* Opinions expressed in this paper are those of the authors and do not necessarily reflect the view of their institutions. We thank Mara Squicciarini for help with data collection and Shanqing Du for help with data preparation. We are also grateful to Sarah Brown, Jan-Emmanuel De Neve, Andrew Oswald, Gurleen Popli, and seminar participants at Bonn, Sheffield, York, and at the European Association of Labour Economists Conference 2016 in Ghent for their valuable comments and suggestions.

NON-TECHNICAL SUMMARY

Most of us like the idea of winning a competition, not least because social recognition appeals to us. While intuitively one would expect higher social status to be associated with a higher satisfaction with life, empirical evidence reveals that the reality is more complex.

A classic example is presented by Victoria Medvec and co-authors, who study the satisfaction of medallists of the 1992 Olympic games in Barcelona. Their results show that not the bronze but rather the silver medallists are the least satisfied. Their explanation, recently confirmed by Paul Dolan and co-authors, goes that silver medallists compare themselves with those above them (gold medallists), finding themselves worse off and hence less happy. At the same time, bronze medallists compare themselves with those who did not win a medal at all, thus finding themselves better off and more satisfied.

In this study that was carried out in rural areas in two states of India (Punjab and Andhra Pradesh), we explore the relationship between satisfaction with life and one's place within the hierarchy of the Indian caste system. The Indian caste system is now more than 2000 years old, and one's caste is predetermined from birth.

In both states, we find that people who are higher up in the caste hierarchy are generally better off. However, while the highest castes are clearly more satisfied with their lives than the others, the middle castes are not happier than the lower castes. In Punjab, we even see a V-shaped pattern: not the lower castes, but the middle castes are the least happy. When we have a closer look at the data, we see that in Punjab, middle and higher castes are relatively similar to each other in terms of educational attainment. In spite of this, the income gap between middle and high castes is striking. In Andhra Pradesh, on the other hand, educational attainment is significantly lower for middle castes, while income disparities are less pronounced. We therefore believe that the V-shape pattern in Punjab could derive from middle castes comparing themselves to higher castes, and aspiring to be at the same income level, while this is much less the case in Andhra Pradesh.

One of the project's main messages is that, despite globalization and a declining importance of the caste system in urban regions, caste still plays a major role in determining life outcomes in rural areas, where more than two thirds of India's population live. Furthermore, it seems that the same mechanisms are at work for Indian rural dwellers than for Olympic medallists: being higher up in the hierarchy does not necessarily make you happier, if you tend to focus on the rung of the ladder above yours.

1 Introduction

Many household surveys contain questions asking respondents about their satisfaction with life (Veenhoven, 2016). There is well-established evidence by now that such subjective reports of actual feelings exhibit external validity and are suitable for interpersonal comparison (Oswald and Wu, 2010). Hence, they are an important source for social scientists to investigate patterns in people's well-being, to study their preferences and eventually to test or develop behavioural theories.¹

As a result, subjective well-being data have taken an important place in the debate on welfare measurement and the construction of welfare indices (Benjamin *et al.*, 2014; Decancq *et al.*, 2015; Oswald, 1997; Stiglitz *et al.*, 2009). While the literature on subjective well-being initially focused on developed economies (for which large panel datasets are widely available), subjective well-being data are increasingly being used in case studies on developing and transition economies as well, with interesting implications for academia and social policy (as there are Devoto *et al.*, 2012; Fafchamps and Shilpi, 2008, 2009; Knight and Gunatilaka, 2010a,b, 2011; Senik, 2009).

“Happiness regressions” have documented patterns of people's satisfaction across a range of objective individual characteristics such as age (Blanchflower and Oswald, 2008), income (e.g. Veenhoven, 1994; Stevenson and Wolfers, 2008; Easterlin *et al.*, 2010), unemployment (Winkelmann and Winkelmann, 1998) and education (Oreopoulos, 2007). The impact of social status on satisfaction and happiness has proved to be a more complex topic for research, in particular due to measurement challenges, but certainly not less fascinating.

Recent work by Anderson *et al.* (2012) tries to isolate the impact of sociometric status, that is, the “respect and admiration” individuals receive from their peers (be it family members, neighbours, colleagues or others) from the material dimensions of socio-economic status. They find that the position individuals have on the “local social ladder” is a strong determinant of their life satisfaction level and they relate this to individuals' personal sense of power and control, which is a critical determinant of psychological well-being (Keltner *et al.*, 2003). Anderson *et al.* (2012)'s work only compares individuals with low social status to individuals with high social status, but the underlying theory suggests that there is a straightforwardly positive correlation between happiness and social status. Such a positive correlation has also

¹Reviews on how happiness research can inform and influence the Economics discipline are presented by Di Tella and MacCulloch (2006) and Powdthavee (2010), as well as Clark *et al.* (2008), who argue that happiness research has contributed greatly to the support for and development of theoretical models on endogenous preference formation.

been found in other studies, including the one by Haller and Hadler (2006) based on the World Value Survey data.

There is some evidence however that the direction of the relationship between happiness and relative standing is slightly more complex and hence not always straightforwardly positive. A salient illustration of this more complex relationship is provided by Medvec *et al.* (1995), who use three different approaches to study the satisfaction of medalists of the Summer Olympic Games in Barcelona in 1992. They find that bronze medal winners are generally more satisfied than silver medal winners, and the authors attribute this to different directions in counterfactual comparison: for silver medal winners, an upward comparison is most likely given the considerable difference in prestige between winning a silver and gold medal, while for bronze medalists the comparison is likely to be downward since there is a considerable difference in winning no medal at all and winning a bronze medal. In a recent paper, Dolan *et al.* (2016), who have data on medalists' performance, confirm this theory of counterfactual thinking: while they find a positive relation between performance and happiness for bronze and gold medalists, they find that silver medalists are less happy the narrower the margin with the gold medalist.

Another strand of literature in the field of social psychology argues that middle status groups tend to feel more insecure (Kelley and Shapiro, 1954; Dittes and Kelley, 1956), resulting in more conforming behavior and possibly in lower well-being as well.

This paper aims to contribute new insights into this emerging field of research by studying the differences in subjective well-being across castes in rural areas of two states in India: Punjab and Andhra Pradesh (AP). Caste has properties similar to those of other often-studied socioeconomic determinants such as gender, race, and ethnicity: it is a fixed and predetermined personal characteristic which can sometimes have important consequences for life outcomes. In addition, the explicit hierarchical structure of the caste system makes it a very interesting context to study how social status can affect people's well-being and other socioeconomic characteristics.

Our data from two similar surveys offer a unique opportunity to compare patterns in subjective well-being and other relevant indicators between two regions, which have important similarities in institutions (for belonging to the same country), but also relevant differences in societal context.

Our paper complements earlier work on subjective well-being in India. Two studies conclude, based on different research strategies, that others' income (both from one's own as well as from different castes) does have a depressing impact on happiness in India, especially for

lower castes (Fontaine and Yamada, 2014) and those on low incomes (Carlsson *et al.*, 2009).² Linszen *et al.* (2011) use a small panel dataset on rural Indians to study the effect of relative consumption on happiness, considering the other villagers as the reference group. None of these studies exploits the explicit hierarchical structure of the caste system to better understand the relationship between happiness and social status.

Our paper is structured as follows. Section 2 provides a brief review of social comparison theory, and how it has been applied and explored in happiness research. Section 3 provides additional background on the Indian caste system. Section 4 describes how the data that are used in this study were collected, and Section 5 presents our key observations based on these data. Section 6 offers a tentative explanation for these observations, and Section 7 concludes.

2 Social Comparison Theory

The subjective well-being literature has advertised the idea that a person's utility is not only determined by absolute conditions (e.g. a higher income), but also by direct comparison of his/her own position relative to others around him/her (e.g. Diener, 1984). This finding has its roots in social psychology research. Festinger (1954)'s social comparison theory posits that individuals have a natural tendency to evaluate their opinions and abilities by comparison with others. The ensuing prediction is that people will feel more happy if they find themselves being better off than others (Brickman and Bulman, 1977).

Even though many models in Economics assume independent preferences, economists have been aware for a long time that preferences might well be interdependent, that is, depend on consumption and behaviour of others. There are several reasons, rooted in economic theory, why people might care about relative income. Rayo and Becker (2007) provide an explanation based on evolutionary theory. The higher one is up in the hierarchy, the more one is secured against covariate shocks which cause scarcity of (basic) goods such as food (Sen, 1981), and it can be shown algebraically that under certain conditions, a community in which people care about relative performance will continuously invest in making progress instead of opting for the status quo (Clark and Oswald, 1998). Duesenberry (1949) and Pollak (1976) are influential examples of work in which interdependent preferences are formally modelled to better explain demand, consumption, and saving behaviour. Frank (1984) presents a model which argues

²Fontaine and Yamada (2014) use a different classification, merging what we refer to as lower castes (SCST) and middle castes (OBC) together in one category of "lower castes". However, their Table 3 regression results, which provide a more disaggregated view, suggest that OBC are less happy than SCST on average, after controlling for several observed characteristics.

that the wage dispersion in a firm can be smaller than that of marginal productivity, as those in the lower-end of the within-firm productivity distribution want to be compensated for being low in rank, while those at the upper-end of the distribution need to pay a premium for being high in rank. Redistributive taxation schemes have been developed that take into account the negative externalities when, under interdependent preferences, humans try to pursue a higher income (Boskin and Sheshinski, 1978).

Most studies in economics that investigate the effects of comparison on satisfaction find indeed that people's happiness responds positively to increases in one's own income, but negatively to increases in the income of others (Clark and Oswald, 1996). The comparison effect has sometimes been found to be so strong that an increase of everybody's income by the same proportion will, in sum, lead to unchanged happiness (Luttmer, 2005). Rather than looking at the difference between own and relative income, one can also model relative income as the percentile in the reference group's income distribution, an approach which in some cases fits the data better (Parducci, 1995). The identification of strong comparison effects in many different specifications has helped to explain the well-known Easterlin paradox (Easterlin, 1995, 2001; Easterlin *et al.*, 2010), which stems from the observation that while for within-country cross-sections, richer people are happier than poorer people, there seems to be no long-run relationship between economic development and happiness.

Some studies find a positive relationship between happiness and reference income, and they attribute this to a signalling effect: if people around me start getting richer, my lot might improve soon as well (Clark *et al.*, 2009). In two influential papers, Senik (2004, 2008) argues that in societies with relatively low social mobility, a comparison effect dominates a signalling effect, while in regions with high social mobility (such as transition countries), a signalling effect tends to dominate a comparison effect.

While people's preferences can depend on others' consumption, many have also argued that preferences can be influenced by one's own past consumption, a concept sometimes referred to as habit formation (e.g. Pollak, 1970; Spinnewyn, 1981). The Economics of happiness has supported the theory of habit formation by showing that in some cases, income changes and other life events can have an impact on one's happiness in the short-run, but a much smaller or even zero impact in the long run (see e.g. Clark *et al.*, 2008, 2016; Di Tella *et al.*, 2010; and Powdhtavee and Oswald, 2008).

Finally, many empirical strategies outside the happiness scope have identified comparison effects as well. For example, van de Stadt *et al.* (1985) evaluate responses to the Income Evaluation Question (IEQ) that asks people which income they would consider to be very bad,

bad, insufficient, sufficient, good or very good for their household. They conclude that there is evidence that income from a reference group as well as one's past income affect responses, *ceteris paribus*. Authors such as Solnick and Hemingway (1998) have elicited relative concerns through thought experiments, by presenting their subjects with pairs of different states of the world in which relative and absolute income are different.

How someone's reference group in social comparison comes about is a complex issue. A reference group can be constituted for example by someone's parents, other family members, colleagues, friends, neighbours, or a mixture of all these categories. But one's reference point and aspirations could as well be influenced by personal characteristics, such as education level or personal interests. To some extent, individuals choose their comparison group strategically. For example, self-improvement interests may encourage individuals to compare themselves with others who are better off in a way (see e.g. Wheeler, 1966 for a discussion of upward comparison); while self-enhancement interests may encourage individuals to compare themselves with others that are worse off than one self (see e.g. Wills, 1981 for a discussion of downward comparison).

Nevertheless, individuals should not be considered as having full discretion as to which reference group they select for social comparison. As argued by Wood (1989), the social environment may impose unwanted comparisons. An example can be found in the observation that children's self-esteem tends to be lower if they are surrounded with others of higher ability, than if they are surrounded with others of lower ability (Bachman and O'Malley, 1986).

Festinger (1954)'s *similarity hypothesis* predicts that individuals will compare themselves to other individuals with similar attributes (see also Goethals and Darley, 1977). Along the same lines, the relative deprivation literature suggests that people are more dissatisfied about not having something, when similar others do have it (Crosby, 1976). The more different others are, the less likely individuals are to compare themselves to them. The attributes under consideration can be the attribute under evaluation itself such as ability, or a related dimension such as age, experience, education level (see e.g. Wheeler and Zuckerman (1977)'s *related-attributes similarity hypothesis*). Crosby (1976) illustrates this by arguing that miners are more likely to compare their wages to those of manual workers, than to the salaries of white-collar workers.

These theories lead to the prediction that an individual's reference group for social comparison is constituted by various groups of other individuals, whereby those individuals who are more similar receive a higher weight in the comparison. If groups that are better off (upward comparisons) have the highest weight in the reference group, this will have a depressing im-

pact on individual subjective well-being; if groups that are worse off (downward comparisons) dominate the reference group, this will have a positive impact on subjective well-being.

Recent studies such as Card *et al.* (2012), Clark and Senik (2010) and Dahlin *et al.* (2014) have tried to better understand which reference groups matter most for comparisons. In general, however, empirical studies have faced major methodological challenges when having to decide whom to include in the reference group, and how much weight different reference groups should be given. A second and more serious problem that has also been recognized in other domains in which peer effects are being studied is that it is hard to separate a peer effect from other factors (Manski, 1993). For example, older people will go to an eye doctor more than others in society, not because their peers do so, but because they generally need more eye care. Likewise, in a happiness regression, peer income might be correlated with the same observable and unobservable characteristics as the ones that affect happiness, making it difficult to isolate these effects from each other. Recently, much progress has been made on these so-called identification issues and lab experiments as well as natural field experiments have been able to confirm the findings of earlier observational studies (Fliessbach *et al.*, 2007; Card *et al.*, 2012).

3 The Indian Caste System

The analysis in this paper considers the Indian caste system as a predetermined source of noneconomic status. In the Indian Hindu tradition, society is classified into a hierarchy of groups (*castes* or *jatis*), which are predetermined by birth. There is a strong preference for within-caste marriage regardless of other socioeconomic characteristics (Banerjee *et al.*, 2013) and caste also matters a lot for politics, business networks and career progress (Iversen and Raghavendra, 2006). Although recent economic growth and globalization have led to increased opportunities especially for lower-caste girls (Munshi and Rosenzweig, 2006), caste still plays a major role in determining many socio-economic outcomes, in particular amongst the rural population which constitutes roughly two thirds of India's population (Iversen *et al.*, 2010). Caste affiliation is determined largely by a family's dominant historical professional occupation; and recent genetic research suggests that caste divisions hardened (with inter-marriage becoming scarce) 1500-2000 years ago (Basu *et al.*, 2016; Moorjani *et al.*, 2013).

There are a large number of castes or "jatis" in India, which are generally classified into four groups or "varnas": the Brahmins (the "priests"), the Kshatriyas (the "warriors and rulers"), the Vaishyas (the "skilled traders, merchants and minor officials") and the Shudras (the "unskilled

workers"). Certain groups have always been excluded from the varna system, and attributed a very low social status for being involved in occupations considered as demeaning, including manual scavenging. These groups have also been referred to as "dalits" or "untouchables".

Since 1950, the Constitution of India includes several measures to fight discrimination of these lower castes, including quotas in education and public sector jobs. When first introduced, lists were drawn up of castes that would be eligible for such affirmative action. These lists distinguish between "Scheduled Castes (SC)" and "Scheduled Tribes (ST)", with the latter comprising a number of indigenous tribes also referred to as "adivasis", but with a social status comparable to the "Scheduled Castes". According to the 2011 Census of India, SC and ST make up respectively 17% and 9% of the Indian population (Census of India, 2011). The majority of these are in rural areas: SC make up 19% of the rural population, ST 11%.

A few measures also apply to a list of "Other Backward Classes (OBC)", a list of castes and communities considered as socially and educationally backward, some of which belong to the Shudra varna. This group of castes comprises around 30% of the Indian population according to the same census. The top layer of the SC/ST/OBCs is often referred to as "the creamy layer", as it is made up of individuals who generally already have a better socioeconomic situation and good levels of education, which enables them to optimally exploit the opportunities offered by reservation policies. In our analysis, SC and ST groups are considered together, as is common in the literature, and referred to as "lower castes". OBC groups are considered separately and referred to as "middle castes". Finally, all other castes falling under the varna system are referred to as "higher castes".

4 Data Collection

For Punjab, a state in the North of India, the household-level data were collected in 2008. In total, 1000 households were selected through a multi-stage sampling method. First, 50 villages were selected across 5 districts through stratified sampling. In each village, 20 households were selected, again based on a stratified sampling strategy.

In AP, a state in the South of India, a similar survey was carried out: 1000 households were interviewed in 50 villages in 2010. In fact, given the large size of the state of AP, the survey could only cover the Southern part of the state, notably the regions referred to as Rayalaseema (the districts Kurnool, Cuddapah, Ananthapur, and Chittoor) and the Southern part of Coastal Andhra (the districts Nellore, Prakasam, Guntur, and Krishna). As such, the survey should be considered only representative for this region. In June 2014, several districts were split off

from the state of AP to form a new state, named Telangana. All of the districts covered in our study remain in the state of AP.

Our survey data from both regions have been collected with identical questionnaires, ensuring that the case studies are more comparable than in many other subjective well-being papers using multiple datasets. This is important since some are concerned that question ordering within a survey and other survey design characteristics might have an effect on subjective well-being responses (Smith, 1979). The questionnaire contained questions on socio-demographic characteristics, household composition, employment, business, and agricultural production patterns, consumption, and subjective well-being. The data allow for the calculation of income and consumption levels at the household level.

As consumption tends to be reported with less measurement error than income, and as the former is better smoothed over time, we use consumption expenditures as our main measure for economic well-being. Consumption is measured as the sum of total expenditures on a detailed list of food and non-food items, with different reference periods according to the type of items, as is usually recommended in the literature (Grosh and Glewwe, 2000).³

The subjective well-being question in the survey is specified as follows: “How happy are you?” with the following answer options: “very happy; happy; more or less happy; not happy/not unhappy; more or less unhappy; unhappy; very unhappy.” These answers are compressed into a 5-point measure by taking categories 5, 6 and 7 together since these contained only very few observations.⁴ Next, the happiness measure is encoded in reverse order such that 1 accords with very low happiness, and 5 with very high happiness.

An important identifying assumption here is that the frame-of-reference (the relationship between a reported score and the actual happiness) is on average the same in the different castes. Earlier research has however shown that, even though there is heterogeneity in frame-of-reference across individuals, it generally seems to be randomly distributed across socioeconomic variables and to have little effect on coefficients in cross-sectional happiness regressions (Beegle *et al.*, 2012; Ravallion *et al.*, 2016).

As the survey was oversampling some household categories, for all figures and regressions

³In particular, it is calculated as the sum of expenditures on eating/drinking out (reference period: last 7 days), various food and fuel items (reference period: last 30 days), expenditures on salt, spices, tea, coffee, tobacco, bottled drinks, nuts, fuel and lights, entertainment, telecom, toilet articles, household items, transport, house rents, utility fees, staff and medical out-patient services (with a reference period of 30 days) and medical in-patient services, costs related to education, to clothing, furniture, personal care and therapeutical items, repair and maintenance, insurance premiums, holidays and social items (with a reference period of 365 days).

⁴The results of our analysis carry over to alternative specifications of the happiness variable such as a more disaggregated (7-point scale) or a more aggregated version (3-point scale).

in this paper, appropriate sample weights are used. As is common in the empirical literature, extreme weights were trimmed to avoid instability of our estimations and inflation of sample estimate standard errors.⁵

5 Data Analysis

Some key descriptive statistics are documented in Table 1. The first column shows sample means, the last column population means which are derived from the sample data using appropriate weights to correct for the stratified sampling strategy.

Households in Punjab are on average richer, with a per capita consumption level of 20,207 Rs/year (roughly corresponding to 464 USD at the time of the survey) as compared to 17,136 Rs/year in AP (roughly equivalent to 375 USD at the time of the survey). The difference in average consumption expressed in current prices between Punjab and AP is a lower bound of the difference in consumption in real prices, since inflation in India is relatively high and the AP survey took place approximately two years after the Punjab survey. The state-wise rural general price index for Punjab was 465 in April 2008 (base: 1986-1987=100) and 561 in AP in 2010 (Government of India, 2009, 2012).

Nevertheless, households in AP seem to be happier on average than those in Punjab: the average happiness scores are 3.5 in Punjab and 3.8 in AP respectively. While household heads in Punjab are slightly older (47.6 years' old versus 46.3 years' old in AP), and households slightly larger in Punjab (5.4 members on average in Punjab versus 4.7 in AP); there is a substantial difference in the education level of household heads. In Punjab, household heads have attended school for 5 years on average; in AP only for 3.2 years. In both samples, more than 92% of household heads are married. Our data suggest that 41% of the Punjabi population under study belongs to the lower castes (SCST); and 10% to the middle castes (OBC). The corresponding figures for AP are 28% and 40%, respectively. This is roughly in line with state-wise official estimates (Census of India, 2011). The distribution of religion across the two states is quite different: while in our data for Punjab, 85% of the households are Sikh, and 14% are Hindu; in AP, there are no Sikh. Instead, 80% of the population is Hindu, 12% are Christians and 7.5% adhere to Islam.⁶

⁵In practice, this means that the 7 lowest sample weights (out of 2000) were slightly scaled up and the 7 highest sample weights were scaled down. Trimming was applied only lightly as strong trimming increases the risk of reducing the representativeness of the sample.

⁶The reported differences between Punjab and AP are all statistically significant at the 1% level, except for the incidence of lower castes, which is statistically significant at the 10% level.

To explore the relationship between caste on the one hand and subjective well-being (happiness) and two of its main determinants, economic well-being (measured as consumption per capita) and level of education, on the other hand, we first carry out a series of parsimonious OLS regressions for both Punjab and AP. Standard errors are robust to heteroscedasticity and sampling weights are being used. Since caste is a fixed and predetermined personal characteristic, the cross-sectional nature of our data suffices for our purpose.

Next, as to better understand the drivers of happiness in these regions, and to investigate whether observable factors alter the observed pattern over the hierarchy of castes, we provide results from happiness regressions in which we add standard controls. These controls, that are available in our data and relevant in this specific rural development context, are years of education, consumption per capita, age, marital status, household size and religion.

The key results of our analysis are presented in Figure 1 and based on estimates documented in Table 2. The vertical bars show the average happiness level for the lower, middle, and higher castes in each region under study, and the horizontal bars indicate the 95% confidence intervals. Figure 2 and Figure 3 present patterns for the log of annual consumption expenditure per capita and the number of completed years of education of the household head (the main respondent to the questionnaire) for each region. The underlying regressions are shown in Table 3.

On average, happiness is higher in AP than in Punjab, in spite of average consumption as well as education levels being higher in Punjab than in AP. A possible driver could be that income inequality is substantially higher in Punjab than in AP, as several studies have shown a negative impact of inequality on subjective well-being (Alesina *et al.*, 2004; Alesina and La Ferrara, 2005) - unless there is high social mobility as in that case inequality can be seen as a sign of opportunity (Clark, 2003).

As expected, the highest castes are the happiest of all in Punjab, but the least happy are not the lower castes, but the middle castes: happiness follows a V-shaped pattern across the hierarchy of castes. On average, happiness is 0.34 points higher for the lower castes than for the middle castes in Punjab, and 0.67 points higher for the higher castes. In contrast, other key socioeconomic variables (consumption and education) are increasing across the hierarchy of castes. On average, the middle castes consume 22% more than the lower castes, while the higher castes consume 21% more, on average, than the middle castes. These differences are all statistically significant, as can be read from Table 3. For education, the curvature is somewhat different. The average education levels of household heads in the middle and higher castes are similar at 5.5 and 5.8 years, while the lower castes lag significantly behind with on average

only 3.9 years of education.

In our AP sample, higher castes are 0.16 points happier than the middle castes, while happiness levels for lower castes are similar to those of middle castes (see Figure 1). Cross-caste patterns of log of annual consumption expenditure per capita and years of education completed by the household head (as depicted in Figure 2 and Figure 3) are different from patterns observed in the Punjab sample. Notably, inequality in consumption per capita across castes is less pronounced than in the Punjab region, with consumption per capita being on average 8% lower (although the difference is only weakly statistically significant) for lower castes and 10% higher for higher castes as compared to middle castes. While in Punjab, the education level of middle and high castes are very similar and lower castes are far behind, Figure 3 presents a mirror image for AP. Household heads in the lower castes and middle castes have 2.6 and 2.7 years of education, while those in the higher castes are significantly ahead with around 4.5 years of education.

Our control variables on happiness have, where significant, the expected sign. Per capita consumption levels have a positive sign in both states, although they are significant only in AP. The household's education level and age do not have a significant impact. Being widowed has a significant negative impact on happiness in AP, and the same goes for being divorced in Punjab.⁷ Household size has a positive significant sign in both states, suggesting that household heads enjoy having their extended family around. Some of the religion variables have a significant effect as well. Sikh and Christian individuals are significantly happier than Hindus in Punjab. Muslims are reportedly less happy, but the difference relative to Hindu individuals is not significant in either of the two states.

6 A Tentative Explanation

In both case studies, the upward trend in socioeconomic variables across the hierarchy of castes is an illustration of how higher status (in this case predetermined) comes with benefits and opportunities in life. It is hence in accordance with mainstream theories of social comparisons that in both case studies, the castes at the top are clearly more satisfied than the lower and middle castes. The observed V-shaped relationship between status and happiness found in Punjab is similar to Medvec *et al.* (1995)'s results on the happiness of Olympic medalists.

⁷Note that these estimates are based on a relatively small set of observations. Moreover, the variation in age of household heads is much smaller than the variation in age of all adults in a household, which could further explain why we do not find any pattern of happiness over the life course, nor when including higher order terms.

Our results also align with earlier findings from social psychology research that middle status groups tend to be more insecure and behave more conforming than those with lower or higher status, as they are more subject to the fear of status loss (Kelley and Shapiro, 1954; Dittes and Kelley, 1956; Duguid and Goncalo, 2015). The reasoning behind this “middle status conservatism” hypothesis is that high-status individuals may be more self-confident and therefore more willing to take on risks while low-status individuals may consider they have less to lose (Phillips and Zuckerman, 2001). An alternative hypothesis with similar implications is that social status behaves as a “luxury good”, for which demand increases more than proportionally with income growth.

In this context, it is particularly interesting that Srinivas (1956) and Khamis *et al.* (2012) find that middle castes in India are more likely than lower castes to strive for social recognition by adapting higher caste habits and investing more in status goods, behavior which has been shown to be associated with lower subjective well-being by Kasser and Ryan (1993). These observations all contribute to a tentative explanation for our observations that middle caste groups are in general less happy than would be expected based on their status, because they attach higher weight to upward comparisons with higher caste groups and are more likely to strive for conformity with these groups than the lower caste groups are.

A possible explanation for the fact why the V-shaped relationship is more pronounced in Punjab than in AP is that in Punjab, middle castes are more likely to identify with higher castes than in AP based on the similarity in education levels between middle and higher castes in Punjab. Indeed, according to Festinger’s (1954) hypothesis, people tend to compare themselves with individuals with similar attributes. Moreover, when education levels are similar, individuals from the two castes are likely to be more often in direct contact with each other and thus can better compare their achievements with those of the other caste.

If higher castes in Punjab have similar education levels (a proxy for abilities), but higher incomes, such upward comparison may further reduce subjective well-being among middle caste groups. In AP, education levels are less similar between middle and higher castes. Moreover, as the differences in living standards between lower and middle castes are relatively small in AP, the difference may be less observable, with a less depressing impact on well-being for those who have less.⁸

Obviously, our results cannot be extrapolated to every comparison setting, as caste is pre-determined and cannot be altered through perseverance and continuous effort. This might

⁸In this context, Haller and Hadler (2006) argue that social class differences in happiness will be larger in societies with high inequality and low political freedom, but they do not provide a direct empirical test of this hypothesis.

explain why the differences in subjective well-being across castes is relatively large, which is in line with the findings that low social mobility is related to a stronger comparison effect (Senik, 2004, 2008) or to a greater inequality-aversion (Alesina *et al.*, 2004).

7 Concluding Discussion

The influence of social status on people's happiness is an important topic, which is reflected by the attention it has been receiving from researchers across different disciplines. Firstly, this interest can be motivated by genuine policy concern about people's happiness, and the ensuing need to explore its determinants. Secondly, as research shows that people generally try to maximize their happiness (Fleurbaey and Schwandt, 2015), understanding how relative standing relates to happiness is an important step towards understanding and predicting human behaviour. Studies that have been able to demonstrate a cause-and-effect relationship between social status and happiness generally conclude that happiness, job satisfaction or other variations of self-reported satisfaction are increasing in social status. Theoretical behavioural models which incorporate a preference for status also assume that happiness or utility is increasing in status.

The pattern of subjective well-being we observe across the caste hierarchy is however non-linear, implying that lower castes are at least as happy as middle castes, even after controlling for standard factors including living standards and education. We hypothesize that this is because middle castes attach more weight to upward comparisons, in line with social psychology research which finds that middle-status individuals are more insecure, and seek more often conforming behaviour, and studies in the Indian context which have found that middle caste individuals are more likely to attempt to claim a higher position in the caste hierarchy, for instance by emulating higher caste rites or investing more in status goods.

Moreover, we reason that middle caste groups are even less happy in a context where they experience high performance gaps (in terms of income disparities) with higher caste groups, in spite of high similarity in terms of education, which can be considered a proxy for ability. This is in line with seminal work by Festinger (1942) who hypothesized that individuals are more likely to socially compare themselves with others of similar attributes, and to find themselves less happy if those similar others perform better, e.g. in terms of income.

While our case studies can inspire the broader debate on the relationship between status and happiness and can be of importance for the further development of behavioural theories, they should also attract attention because of the sheer size of the population to which they

relate. India has over one billion inhabitants, and around two thirds of them live in rural areas. While in urban areas, the caste system is becoming less important due to globalization, our case studies are a reminder that they still play an important role in rural areas, and underline the necessity of further analysis of the patterns of happiness in rural India as well as of the contemporaneous role of the caste system in these areas.

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Figure 1: Happiness score by caste

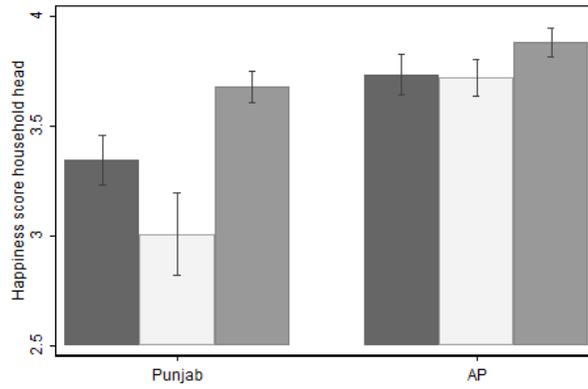


Figure 2: Log (cons. per cap.) by caste

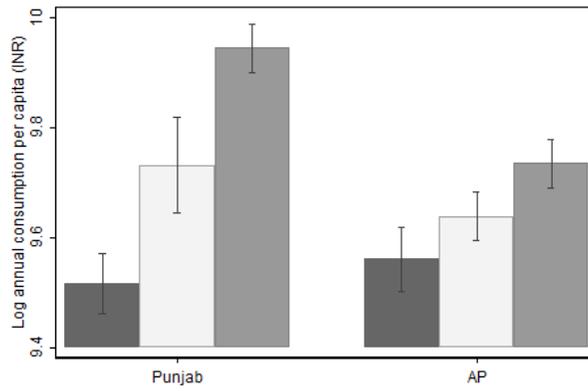


Figure 3: Years of education by caste

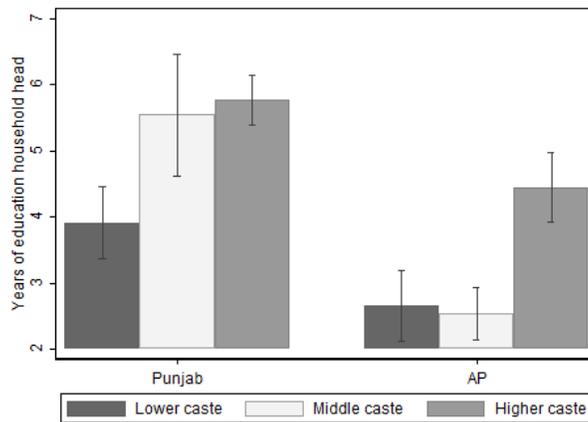


Table 1: Summary statistics

Punjab sample

Variable	Mean	SD	Min.	Max.	N	Pop. Mean
Happiness	3.5	0.89	1	5	1000	3.5
Consumption per capita (Rs/year)	24,884	19,755	4,321	253,782	999	20,198
Education household head (years)	5.1	4.6	0	17	1000	5.0
Age household head (years)	49.0	12.4	18	90	1000	47.6
Nr household members	5.8	2.5	1	23	1000	5.4
Married (1= Yes)	0.927	0.260	0	1	1000	0.927
Never married (1= Yes)	0.016	0.126	0	1	1000	0.014
Widowed (1= Yes)	0.055	0.228	0	1	1000	0.059
Divorced (1= Yes)	0.002	0.045	0	1	1000	0.000
Lower caste (1= Yes)	0.276	0.447	0	1	1000	0.409
Middle caste (1= Yes)	0.117	0.322	0	1	1000	0.098
Hindu (1= Yes)	0.123	0.329	0	1	1000	0.140
Sikh (1= Yes)	0.869	0.338	0	1	1000	0.852
Christian (1= Yes)	0.001	0.032	0	1	1000	0.003
Muslim (1= Yes)	0.005	0.071	0	1	1000	0.004

Andhra Pradesh sample

Variable	Mean	SD	Min.	Max.	N	Pop. Mean
Happiness	3.9	0.70	1	5	990	3.8
Consumption per capita (Rs/year)	17,439	8,975	2,480	89,945	999	17,136
Education household head (years)	3.4	4.6	0	18	963	3.2
Age household head (years)	47.0	11.1	22	82	984	46.3
Nr household members	5.0	2.0	1	16	999	4.7
Married (1= Yes)	0.956	0.205	0	1	998	0.952
Never married (1= Yes)	0.022	0.147	0	1	998	0.033
Widowed (1= Yes)	0.022	0.147	0	1	998	0.016
Divorced (1= Yes)	0.000	0.000	0	0	998	0.000
Lower caste (1= Yes)	0.241	0.428	0	1	1000	0.277
Middle caste (1= Yes)	0.411	0.492	0	1	1000	0.396
Hindu (1= Yes)	0.830	0.376	0	1	1000	0.801
Sikh (1= Yes)	0.000	0.000	0	0	1000	0.000
Christian (1= Yes)	0.108	0.311	0	1	1000	0.116
Muslim (1= Yes)	0.057	0.232	0	1	1000	0.075

Table 2: Regression results (Reference group = Middle castes)

VARIABLES	Happiness			
	Punjab	Punjab	AP	AP
Lower castes	0.335*	0.427***	0.015	0.035
	(0.199)	(0.209)	(0.091)	(0.104)
Higher castes	0.672***	0.641***	0.160***	0.121*
	(0.197)	(0.200)	(0.081)	(0.084)
Log (cons per capita)		0.172		0.334***
		(0.136)		(0.082)
Education household head		0.010		-0.001
		(0.014)		(0.007)
Age household head		-0.001		-0.000
		(0.004)		(0.003)
Never married		0.065		0.044
		(0.327)		(0.170)
Widowed		0.194		-0.369*
		(0.244)		(0.236)
Divorced		-1.928***		
		(0.316)		
Household size		0.048**		0.041***
		(0.027)		(0.017)
Sikh		0.250*		
		(0.170)		
Christian		1.366***		-0.006
		(0.363)		(0.112)
Muslim		-0.562		-0.027
		(0.649)		(0.175)
Constant	3.007***	0.821	3.718***	0.332
	(0.176)	(1.390)	(0.069)	(0.834)
Observations	1,000	999	990	965
R-squared	0.053	0.083	0.009	0.044

Results are drawn from Ordinary Least Squares regressions
 Huber-White robust standard errors are presented in parentheses
 *** p<0.05, ** p<0.10, * p<0.15

Table 3: Regression results (Reference group = Middle castes)

VARIABLES	Log(cons. per cap.)		Years of education	
	Punjab	AP	Punjab	AP
Lower castes	-0.215*** (0.086)	-0.077* (0.048)	-1.628* (1.082)	0.080 (0.444)
Higher castes	0.212*** (0.086)	0.096*** (0.041)	0.222 (1.053)	1.861*** (0.467)
Constant	9.731*** (0.072)	9.638*** (0.030)	5.538*** (0.959)	2.618*** (0.274)
Observations	999	999	1,000	963
R-squared	0.137	0.023	0.035	0.036

Results are drawn from Ordinary Least Squares regressions
 Huber-White robust standard errors are presented in parentheses
 *** p<0.05, ** p<0.10, * p<0.15