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Subjective Well-Being: Happiness and Life Satisfaction in India and South Africa

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Chapter 2

Subjective Well-Being: Happiness and Life Satisfaction in India and South Africa

Abstract

This chapter has two purposes; the first is to test differences between dominant and subordinate groups in India and South Africa. For India, the comparison is between caste groups: the dominant “forward castes” and the subordinate “non-forward castes”. For South Africa, the comparison is between racial groups: Whites as a dominant group and non-Whites (Blacks, Coloured, and Asians) as a subordinate group. The second purpose of the chapter is to compare happiness levels between India and South Africa with a view to rigorously establishing where happiness is greatest and what its drivers are. These issues are examined using data from the World Values Survey (WVS). Covering in excess of 250,000 respondents drawn from 90 countries, and available for the period 1994–2014, WVS remains the most widely accessible database on well-being. This chapter establishes that, in general, Indians were happier than South Africans in this period, meaning that the predicted probability of being happy was, on average, higher in India (84.2%) than in South Africa (81.1%). Another important finding was that persons from the dominant groups were more likely to be happy in South Africa than in India but that persons from the subordinate groups were more likely to be happy in India than in South Africa.

2.1. Introduction

The idea that the subjective well-being of its citizens should play an important role in the formulation of a government's policies needs little justification. Successive *Happiness Reports* from the United Nations Sustainable Development Solutions Network, starting in 2012, have emphasised that “material gain alone will not fulfil our deepest needs. Material life must be harnessed to meet these human needs, most importantly to promote the end of suffering, social justice, and the attainment of happiness” (Sachs, 2012, p.3). Subjective well-being, as Kahneman and Deaton (2010) point out, involves two distinct concepts. The first is that of “happiness” (or, synonymously, “emotional well-being”). This refers to the emotional quality of an individual's quotidian experiences as represented by the spectrum, and the intensity, of feelings like joy, disappointment, frustration, anger, anxiety, sadness. The second aspect of subjective well-being is “life satisfaction” (or synonymously, “life evaluation”). This refers to individuals evaluating events in their lives — failures, achievements, losses, gains — before arriving at a judgement of how satisfied they are with life.

The distinction between emotional well-being and life evaluation is, however, amorphous with several areas of similarity punctuated by facets of difference. Some aspects of life — friendship, health, marriage — are likely to affect happiness more than evaluation. Other aspects, like education or income, might make people happy but they are more likely to be associated with high life satisfaction. Other life features may have more than one facet, with facets affecting happiness and raising satisfaction through one another: the social aspects of religion could increase happiness by reducing loneliness but religion's spiritual aspects could lead to a higher life satisfaction.

Both emotional well-being and life evaluation are usually measured by simply asking people to rate their degree of happiness or level of life satisfaction — the former by asking respondents, for example, “taking all things together, would you say that you are: (i) very happy; (ii) rather happy; (iii) not very happy; (iv) not at all happy”; the latter by asking them to rate their life satisfaction (“all

things considered how satisfied are you with life these days?") on a scale of, say, 1 to 10 with 1 representing the lowest level of satisfaction ("completely dissatisfied"), and 10 the highest ("completely satisfied").¹

While people may find it difficult to define happiness or life satisfaction, they know, clearly and unambiguously, when they are happy or unhappy or satisfied or dissatisfied; moreover, people from different backgrounds could be made happy or unhappy by the same things — ill-health, divorce, lack of friends, money, or social status. If we knew what these factors were, and their relative strengths, we could in theory fashion policy to make people happier. Although this chapter analyses subject well-being in terms of both its emotional well-being and its life evaluation aspects, its orientation is more towards the former than the latter.

Following from the increasing importance that academics and policy makers attach to subjective well-being, there have been a plethora of studies about its determinants. Some of these studies have encompassed groups of countries (for example, Clark *et al.*, 2018 for Australia, Britain, Germany, and the USA), others have focused on single countries (for example, Knight and Gunatilaka, 2014 for China; Moro *et al.*, 2006 for Ireland), and yet others have focused on regions within countries (for example, Borooah, 2006 for Northern Ireland). The general consensus from these studies is that *inter alia* health, standard of living, education, friends, neighbourhood quality, and religiosity all coalesce to determine the well-being of individuals.

A feature that is, however, neglected in studies of subjective well-being is that of differences in happiness between subgroups of the population. These differences are likely to be important when, perhaps for historical or cultural reasons, a country's population is subdivided into dominant and subordinate groups: in such situations *ceteris paribus* the happiness of persons belonging to subordinate groups may be lower than that of those in dominant groups simply by virtue of group membership.

Several examples of such countries and groups exist. To name but a few: in India, between upper and lower castes; in Sri Lanka, between Muslims and Buddhists and between Tamils and Sinhalese; in China, between Hans and Uighurs; in South Africa and the USA between Whites and Blacks; in Malaysia, between Bumihars and Chinese/Indians; and, most recently, between Rohingyas and Bamars in Myanmar. In all these cases, one may reasonably hypothesise that the less favourable treatment — either historical or current — of persons from subordinate groups may deliver them a lower level of subjective well-being, both in terms of happiness and life satisfaction, than is available to their peers from dominant groups.

The first purpose of this chapter is to test this hypothesis for India and South Africa. For India, the comparison is between caste groups: the dominant “forward castes” and the subordinate “non-forward castes”. For South Africa, the comparison is between racial groups: Whites as a dominant group and non-Whites (Blacks, Coloured, and Asians) as a subordinate group. The second purpose of this chapter is compare happiness levels between India and South Africa with a view to rigorously establishing where happiness is greatest and what its drivers are.

This chapter uses data from the World Values Survey (WVS) to address these issues. The WVS — covering in excess of 250,000 respondents, drawn from 90 countries, and available for the period 1994–2014 — remains the most widely accessible database on well-being. It has been assembled by a group of researchers around the globe and is organised as a network of social scientists coordinated by a central body, the World Values Association. Most recently the WVS data has been released in longitudinal form encompassing six waves: 1989–93; 1994–98; 1999–2004; 2005–09; 2010–14; this chapter is based on an analysis of these data (Inglehart *et al.*, 2014). The data generated a sufficiently large number of observations of respondents in India and South Africa distinguished by dominant/subordinate group. For India there were a total of 5,580 respondents of which: 1,380 were from the Forward Castes; 1,564 from the Other Backward Classes; 1,461 Dalits; 1,023 from the Scheduled Tribes; and 256 Muslims. Similarly, for South Africa, these were a total of 11,299

respondents of which: 2,405 were White; 6,772 were Black; 1,443 were Coloured; and 679 were Asians.

2.2. Dominant and Subordinate Groups in India and South Africa

The caste system in India stratifies Hindus, constituting 80% of India's population, into mutually exclusive groups, membership of which is determined entirely by birth, and the caste into which a person is born plays an important role in India in determining his/her life prospects. Very broadly, one can think of the "Forward Castes" (hereafter, FC) as comprising the three subgroups: *brahmins*, *Kshatriyas*, and *vaisyas*.² Below these are the non-Forward Castes (hereafter, non-FC). These comprise, firstly, the Other Backward Classes (OBC) who, while included in the Hindu caste system as its fourth caste, traditionally perform menial jobs. Then there are those persons (mostly Hindu, but some who have converted to Buddhism or Christianity) with whom Hindus regard any physical contact as polluting or unclean — this is the practice of "untouchability". Such persons are regarded as, and regard themselves as, Hindus but are seen as outside the caste system. They are referred to in this chapter by their preferred name, *Dalits* (meaning "broken" or "oppressed").

Also included in the list of non-FC are the Scheduled Tribes (ST). There are about 85 million Indians classified as belonging to the ST. Of these, *Adivasis* (meaning "original inhabitants") refer to the 70 million who live in central India, in a relatively contiguous hill and forest belt extending across the states of Gujarat, Rajasthan, Maharashtra, Madhya Pradesh, Chhattisgarh, Jharkhand, Andhra Pradesh, Orissa, Bihar, and West Bengal (Guha, 2007).

The last group of persons included in the non-FC category are Muslims. In terms of religion, it is Muslims who bear the brunt of deprivation and exclusion in India. The Sachar Committee (2006) in its report to the Government of India highlighted the backwardness of Indian Muslims. This report drew attention to a number of areas of disadvantage, including: the existence of Muslim ghettos

stemming from their concern with physical security; low levels of education engendered by the poor quality of education provided by schools in Muslim areas; pessimism that education would lead to employment; difficulty in getting credit from banks; the poor quality of public services in Muslim areas.

South Africa adopted a system of apartheid in 1948 which continued until it was replaced in 1994 by a government elected on the basis of universal franchise. Apartheid was founded on the notion of white supremacy and ensured that the country was dominated in all respects — culturally, politically, socially, and economically — by its minority white population. During the apartheid years, a series of laws institutionalized racial discrimination by classifying the people of South Africa along racial lines — White, Coloured, Asian or Indian, and Black (African) — under the Population Registration Act of 1950, and then regulating their range of permissible activities.³ The legislation specified where and how the different “races” could live, travel, work, be educated, get married, and mingle. This included complete separation of races, prohibiting all intermarriage between Africans, “Coloureds”, and Asians. Indians were to be repatriated back to India, and the national home of Africans would be in the reserve lands. Africans in urban areas were to be migratory citizens, and black trade unions would be banned (Boddy-Evans, 2019).

As a result of apartheid, there were glaring inequalities in economic and social outcomes and opportunities between South Africa’s White and non-White population. During the apartheid era, Black people were not allowed to run businesses or professional practices in areas reserved for White South Africans. Certain jobs were designated “White only”, Black education was specifically designed to prepare Blacks for the labouring class, and Whites, who were only 10% of the population, owned 80% of the land (Archibong and Adejunno, 2013).

The origins of stigmatisation often lie in a history of dishonour. So, the stigmatisation of Blacks in South Africa and the USA has its origins in slavery — slavery in South Africa lasted from 1658 to

1834 (Worden, 2000) — which represented the violent domination of “naturally inferior” persons (Loury, 2002; Patterson, 1982). Similarly, in the traditional scheme of the caste system, the untouchables in India, who are at the bottom of caste hierarchy, were denied rights — civil, social, cultural, religious, and economic — in a manner that was clearly specified in the customary laws of the caste system. The *Manusmṛti* (or the Laws of Manu) is the centrepiece of Hinduism’s *varnasram-dharma* and determines the rights and obligations of all those born as Hindus (Doniger and Smith, 1991). Like Blacks who, under apartheid in South Africa or under Jim Crow laws in the Southern states of the USA, were punished for “getting above themselves”, *Manusmṛti* declared that “the king shall deprive of his property and banish a man of low caste who through covetousness lives by the occupations of a higher one”.⁴

So, caste and race have this in common: they are both socially constructed hierarchies such that persons who are deemed to be naturally inferior — whether by virtue of caste or skin colour — suffer from a history of stigmatisation and discrimination vis-à-vis their natal superiors. Under the umbrella of this primary similarity there are, of course, secondary differences. One of these is that differences in caste are not as readily visible as racial differences and the other is that the notion of caste is linked to the idea of pollution in Hinduism which, in turn, leads to the practice of “untouchability”.⁵

2.3. Model Specification

A binary variable, *Y*, was constructed from the WVS responses to the happiness prompt — very happy, quite happy, not very happy, not at all happy — which took the value 1 for respondents who said they were “very happy” or “quite happy” (hereafter, “happy”) and the value 0 for respondents who said they were “not very happy” or “not at all happy” (hereafter, “unhappy”). Table 2.1 shows that, of the 5,580 respondents in India to this question, 84.3% said they were happy while of the 11,299 South African respondents, 80.6% felt similarly.

<Table 2.1 here>

In terms of a breakdown of happiness by social group, 89.5% of FC, 85.7% of OBC, 83.2% of Dalits, 79.1% of ST, and 72% of Muslim respondents said they were happy. In terms of racial group, 94.6% of Whites, 88.8% of Coloured persons, 84.2% of Asians, and 73.4% of Blacks said they were happy. So, in India and in South Africa, there was *prima facie* evidence of a group hierarchy to happiness: in India, persons from the FC were at the top and Muslims were at the bottom of the happiness scale, while in South Africa, Whites were most, and Blacks were least, likely to say they were happy.

A ternary variable, Z , was constructed from the 10-point WVS responses to the life satisfaction prompt. These responses were split into three quantiles such that Z took the values: 1 if the WVS responses were in the lowest quantile, the value 2 if the WVS responses were in the next quantile, and the value 3 if the WVS responses were in the highest quantile. In terms of life satisfaction, the values of Z are, hereafter, taken as representing: “low satisfaction” for $Z=1$; “moderate satisfaction” for $Z=2$; and “high satisfaction” for $Z=3$.

Table 2.1 shows that in India and South Africa, respectively, 38.2% and 42.7% of respondents expressed low satisfaction while, respectively, 32.4% and 25.5% expressed high satisfaction. In terms of social groups, the striking feature for India was that nearly two out of three Muslims expressed low life satisfaction with 28% of them expressing unhappiness. For South Africa, the striking feature was that nearly one in two Black persons expressed low life satisfaction, with 27% of them expressing unhappiness.

Conclusions about the link between persons’ social group, on the one hand, and their happiness/life satisfaction on the other, based on the raw data presented in Table 2.1, could misstate the relationship because they ignore the effect of other, non-social group factors which could also have affected feelings of happiness/satisfaction. For example, two persons belonging to the same social group may have different levels of education or income or be of different ages and these differences could

influence whether they were happy. If that were so, then some of the observed strength of the social group–happiness relation might be due to the fact that persons in some groups were, on average, better educated/younger/richer than persons from other groups. A relation between social group and happiness/satisfaction could only be substantiated if such a relation could be shown to exist *after* controlling for non-group factors. For example, Dalits and Muslims could be less happy/satisfied than FC persons not for reasons of caste or religion per se but — if income and education affected happiness/satisfaction positively — because Dalits and Muslims were poorer or had less education than those from the FC.

For an estimation sample comprising N persons (indexed, $i=1, \dots, N$), the happiness equation was estimated using logit methods since the dependent variable, Y , took binary values: $Y_i=1$ if respondent i was “happy”, $Y_i=0$ if respondent i was “unhappy” . The life satisfaction equation was estimated using multinomial logit methods since the dependent variable, Z , took three values: $Z_i=1$ if respondent i 's satisfaction was low; $Z_i=2$ if it was moderate; and $Z_i=3$ if it was high.

Logit and Multinomial Logit Models

Under a logit model:

$$\frac{\Pr(Y_i = 1)}{1 - \Pr(Y_i = 1)} = \mathbf{X}_i \hat{\boldsymbol{\beta}} \Rightarrow \Pr(Y_i = 1) = \frac{\exp(\mathbf{X}_i \hat{\boldsymbol{\beta}})}{1 + \exp(\mathbf{X}_i \hat{\boldsymbol{\beta}})} = F(\mathbf{X}_i \hat{\boldsymbol{\beta}}) \quad (2.1)$$

where: $\mathbf{X}_i = \{X_{ij}, j = 1 \dots K\}$ represents the vector of observations, for person i , on K happiness influencing variables and $\hat{\boldsymbol{\beta}} = \{\beta_j, j = 1 \dots K\}$ is the associated vector of coefficient estimates.

In a multinomial logit model with J (in this case, $J=3$) mutually exclusive possible outcomes, indexed, $j=1 \dots J$, for each individual i , indexed $i=1 \dots N$, the dependent variable Z_i is defined as taking the value j for individual i (that is, $Z_i = j$) if outcome j occurs for individual i .

If outcome J is taken as the base outcome, the multinomial logit represents, for each individual ($i=1 \dots N$), the logarithm of the odds ratio of outcome j ($j=1 \dots J-1$) — to the base outcome, J — as a linear function of K determining variables (indexed, $k=1 \dots K$) with X_{ik} representing the value of variable k for individual i :

$$\log\left(\frac{p_{ij}}{p_{iJ}}\right) = \sum_{k=1}^K \beta_{jk} X_{ik}, j = 1 \dots J - 1 \quad (2.2)$$

where: $p_{ij} = \Pr(Z_i = j)$, $\sum_{j=1}^N p_{ij} = 1$ and β_{jk} are the coefficients associated with j^{th} outcome for the k^{th}

determining variable, with by definition, $\beta_{jk} = 0$ ($k = 1 \dots K$). The assumption is that these coefficients do not vary across the individuals in the sample.

Following the advice contained in Long and Freese (2014), the results from the estimated happiness equation (equation (2.1)) and the estimated life satisfaction equations (equation (2.2)) are presented in the form of *predicted probabilities* (that is, $\Pr(Y_i=1)$ for the happiness equation and $\Pr(Z_i=j), j=1,2,3$ for the life satisfaction equations) computed from the estimated coefficients. This is made possible by

using a suite of options associated with the powerful *margin* command, available in STATA v14.0 onwards.⁶ This is because the logit and multinomial estimates do not have a natural interpretation per se and they exist as a basis for computing more meaningful statistics which are the predicted probabilities $\Pr(Y_i = 1)$ and $\Pr(Z_i = 1)$, $\Pr(Z_i = 2)$, $\Pr(Z_i = 3)$.⁷

2.3.1. The Method of Recycled Predictions

The results in this chapter are presented in terms of the probabilities computed from equations (2.1) and (2.2), using the method “recycled predictions” described in Long and Freese (2014, chapter 4) and in a STATA manual.⁸ Since this method underpins the results presented in this chapter it is useful, at the very outset, to describe it in some detail. The variables Y_i in equation (2.1) and Z_i in equation (2.2) are defined over persons distinguished by different characteristics — by social group, social status, educational attainment, etc.

Suppose that one of these characteristics is social group and persons as identified *inter alia* by whether they belong to a “dominant” or a “subordinate” group. The object is to identify the probabilities of having a particular condition which can be *entirely* ascribed to group membership and, further, to test whether these differ significantly between those in the dominant and subordinate group. The method of “recycled predictions” enables one to do this.

Suppose that the first variable relates to a person’s group so that $X_{i1}=1$ if person i is from the dominant group, $X_{i1}=2$ if he/she is from a subordinate group. For ease of exposition assume that the respondents are ordered so that the first M respondents are from the dominant group $X_{i1}=1$ for $i=1..M$ and $X_{i1}=2$ for $i=M+1..N$. Now, using the logit estimates from equation (2.1), one can predict for each person his/her probability of being happy. This probability of being happy is denoted $\hat{p}_i (i=1..N)$.

The mean of the \hat{p}_i defined over all the N persons in the estimation sample will be the same as the (estimation) sample proportion of persons that said they were happy (that is, persons for whom $Y_i=1$). Similarly, the mean of the \hat{p}_i defined over the M dominant, and the $N-M$ subordinate, group persons will be the same as the (estimation) sample proportion of persons from these two groups that said they were happy. In other words, the estimated logit equation passes through the sample means.⁹

However, the difference between the two sample means, dominant (\hat{p}^D) and subordinate (\hat{p}^S), does not reflect the differences, due solely to group membership, between persons from the two groups in their probabilities of being happy. This is because persons from the two groups differ not just in terms of group identity but also with respect to variables like social class, education, etc. Computing the mean probabilities over each subgroup will not neutralise these differences and, hence, differences between \hat{p}^D and \hat{p}^S cannot be attributed *solely* — though, of course, some part may be attributable — to differences in group membership.

The method of “recycled predictions” isolates the *group effect* on the predicted probability of dominant and subordinate group persons of being happy. First, “pretend” that *all* N persons in the estimation sample are from the dominant group. Holding the values of the other variables constant (either to their observed sample values, as in this chapter, or to their mean values), compute the average probability of being happy under this assumption and denote it \tilde{p}^D . Next, “pretend” that *all* N persons in the estimation sample are from the subordinate group and, again holding the values of the other variables constant, compute the average probability of being happy under this assumption and denote it \tilde{p}^S .

Since the values of the non-group variables are unchanged between these two hypothetical scenarios, the only difference between them is that, in the first scenario, the dominant group coefficient is “switched on” (with the subordinate group coefficient “switched off”), while, in the other scenario, the subordinate coefficient is “switched on” (with the dominant group coefficient “switched off”), for

all the N persons in the estimation sample.¹⁰ Consequently, the difference between \tilde{p}^D and \tilde{p}^S is *entirely* due to differences in group membership.

Similarly, using the multinomial logit estimates from equation (2.2), one can predict for each person his/her probability of low/moderate/high life satisfaction: q_i^L, q_i^M , and q_i^H . Again, using the two hypothetical scenarios — all persons from, respectively, the dominant and subordinate groups — one can construct the average probabilities of low/moderate/high satisfaction under these two scenarios and denote them $\tilde{q}_D^L, \tilde{q}_D^M$, and \tilde{q}_D^H for the dominant group scenario and $\tilde{q}_S^L, \tilde{q}_S^M$, and \tilde{q}_S^H for the subordinate group scenario. Then the difference between the predicted probability of low/moderate/high satisfaction between the dominant and subordinate groups — \tilde{q}_D^L and $\tilde{q}_D^L; \tilde{q}_D^M$ and $\tilde{q}_D^M; \tilde{q}_D^H$ and \tilde{q}_D^H — can be entirely ascribed to group membership since the only thing that was changed between each pair of probabilities was group membership.

In essence, therefore, in evaluating the effect of two characteristics A and B on the likelihood of a particular outcome, the method of “recycled predictions” compares two sets of average probabilities: first, under an “all have the characteristic A ” scenario, and then under an “all have the characteristic B ” scenario, with the values of the other variables remaining unchanged between the scenarios. The difference in the two probabilities is then entirely due to the attributes represented by A and B (in this case, differences between dominant and subordinate group membership). These probabilities, respectively \tilde{p}^A and \tilde{p}^B , are referred to in this chapter as the *predicted probabilities* (PP) of an event under A and B . So, for example, in the earlier exposition, \tilde{p}^D and \tilde{p}^S refer to the predicted probabilities (PP) of persons from the dominant and subordinate groups being happy, $\tilde{q}_D^L, \tilde{q}_D^M$, and \tilde{q}_D^H refer to the predicted probabilities of persons from the dominant group — and $\tilde{q}_S^L, \tilde{q}_S^M$, and \tilde{q}_S^H refer to the predicted probabilities of persons from the subordinate group — having low/moderate/high levels of satisfaction.

2.4. Estimation Results from the Happiness Equation

Table 2.2 shows the results from estimating the happiness equation, for India and South Africa, as a logit model. The equations for India and South Africa were estimated on samples of 5,580 persons and 11,299 persons, respectively, and the results for both countries are shown in the Table in terms of the predicted probabilities of being happy. The sample was subdivided into two groups: a *dominant* group and a *subordinate* group. The dominant group in India comprised the FC, while for South Africa it consisted of Whites; the subordinate group in India comprised Muslims and persons belonging to the OBC, the SC, and the ST (hereafter, non-FC), while for South Africa it consisted of Blacks, Coloured, and Asians (hereafter, non-White).

<Table 2.2 here>

As discussed earlier, the predicted probabilities (of being happy) for persons in the FC and non-FC, and White and non-White, groups were obtained in Table 2.2 by assuming that the entire sample of 5,580 persons in India were, respectively, FC and non-FC and by assuming that the entire sample of 11,299 persons in South Africa were, respectively, White and non-White. These probabilities are shown in Table 2.2 as 84.7% for the FC and 83.7% for the non-FC and as 88.7% for Whites and 79.3% for non-Whites. The next column in Table 2.2 (labelled marginal probability) shows the *change* in the predicted probability of being happy when group identity was altered from the reference group — the FC in India and Whites in South Africa, denoted [R] in Table 2.2 — to that of the “target” group — non-FC in India and non-Whites in South Africa. Dividing the marginal probability by its standard error yields the associated z value.

The z value indicates whether the difference in the predicted probability of being happy between the reference and the target group (the *marginal* probability) was significantly different from zero. The conclusion from Table 2.2 is that, in India, there was no significant difference between the FC and non-FC in their predicted probabilities of being happy (respectively, 84.7% and 83.7%) while in

South Africa, the predicted probability of being happy was significantly higher for Whites (88.7%) than for non-Whites (79.3%).

In a similar vein, the predicted probabilities (of being happy) for men were computed by first assuming that the entire sample of 5,580 persons in India and 11,299 persons in South Africa were male and then assuming that the entire sample, in the respective countries, was female. The results show that while in India there was no gender difference in the predicted probability of being happy, men were significantly less likely to be happy than women in South Africa (Table 2.2: 79.4% versus 81.6%).

The predicted probabilities (of being happy) for persons in good/very good health and in poor health were also computed by first assuming that the entire sample of 5,580 persons in India and 11,299 persons in South Africa were in good health and then assuming that the entire sample, in the respective countries, was in poor health. These probabilities are shown, for India, in Table 2.2 as 95.4% for those in good health and 70.7% for those in poor health yielding a difference of 24.6 points which, with an associated z value of 19.6, was significantly different from zero. Similarly, for South Africa, Table 2.2 shows the predicted probability of being happy as 88.3% and 63.9% for those in, respectively, good and poor health and this difference 24.4 points, with an associated z value of 21.4, was also significantly different from zero. The conclusion from this is that in both India and South Africa, there was a significant difference between persons in good and in poor health in their predicted probabilities of being happy. Similarly, in both India and South Africa, the predicted probability of being happy was significantly higher for persons in good health than for those in fair health. Lastly, in both countries, the predicted probability of being happy was significantly higher for persons in fair health than for those in poor health.

The strong link between health and happiness evidenced in Table 2.2 is consistent with the findings of most researchers. Gerdtham and Johannessen (2001) analysed a random sample of 5,000 individuals from Sweden to show that happiness increases with health. Angner *et al.* (2009) explored the link

between health and happiness for 383 older adults in primary care centres across the state of Alabama in the USA, to show that very often subjective health measures (such as those used in the WVS) are better predictors of happiness than objective measures. Borooah (2006), in a study for Northern Ireland, showed that while bad health had a negative effect on happiness, the strongest link between health and happiness was through mental illness: compared to not having any health problem, mental illness directly reduced the probability of being happy by 39.8 points.

In both India and South Africa, the predicted probability of being happy increased significantly as one moved up the social ladder, though this increase was more marked in South Africa than in India.

Table 2.2 shows that the predicted probability of persons in the lowest social class being happy was 76.9% in India and 71.7% in South Africa rising to 88.2% in India and 87.8% in South Africa for persons in the upper middle classes. Social class is, of course, a proxy for income and so to say that happiness increases with social class is to say that money was capable of buying happiness. This broad conclusion needs, however, to be nuanced. In both India and South Africa, while the predicted probability of happiness rises sharply between persons in the lowest class and those in the next highest (working class) — from 76.9% to 80.3% in India and from 71.7% to 84.6% in South Africa — it rises by very little between the lower and the upper middle classes, climbing from 86.2% to 88.2% in India and from 85.5% to 87.8% in South Africa.

These results are consistent with those of Kahneman and Deaton (2010) who found on the basis of 450,000 survey responses that, beyond a certain level, more income (estimated by them as an annual income of US\$75,000) led to very small increases in happiness though it did lead to increases in life satisfaction. Social class, however, is indicative of more than income: it reflects status, position, and power in society. Islam *et al.* (2009), in a study for Brazil, suggested that while income was an important consideration in the prediction of happiness, the effects might be channelled through proximal lifestyle mechanisms such as how individuals perceived themselves to be placed in society and how their objective consumption patterns reflected their high status.

The acquisition of education above an elementary level increased the predicted probability of happiness in India. As Table 2.2 shows, compared with the predicted happiness probability of 80.7% for those whose *highest* education level was elementary education, people with secondary education — vocational (86.4%) or academic (85.3%) — and those with university education (86%) all had significantly higher probabilities of being happy. However, there was no significant difference in the predicted probability of being happy between those whose highest level was secondary vocational and secondary academic; nor was there any significant difference between those with secondary, whether vocational or academic, and university education. In the South African context, there was no significant relation between education levels and the predicted probability of being happy. These results are again consistent with the findings of Kahneman and Deaton (2010): education had, perhaps, more to do with life evaluation than with emotional well-being.

Both in India and South Africa, social relationships — as expressed in the importance attached to friends — were significantly important in terms of the predicted probability of happiness. Persons who thought that friends were important (either “rather important” or “very important”) had significantly higher probabilities of happiness than those for whom friends were not important. In India, the predicted probability of being happy rose from 81.9% for those for whom friends were not important to 85% for those for whom friends were rather important while, in South Africa, the corresponding rise was from 78.5% to 81.7% (Table 2.2). Neither in India nor in South Africa was there, however, a significant difference in the predicted probability of being happy between those who regarded friends as “rather important” and those who regarded friends as “very important”.

Demir *et al.* (2007), in a study of 280 persons at a Midwestern University in the USA, found that friendships were an important source of happiness and what mattered particularly was the quality of friendship: people were happiest when they experienced high quality close friendships in conjunction with best friendship. In another study, Helliwell and Huang (2013) focused on the *number* of friends rather than on the quality of friendship. Using a sample of 5,000 persons in Canada, they compared the effects of “real” friends and of “online” friends on happiness. Their conclusion was that while the

number of real-life friends was positively correlated with happiness, the size of online networks left happiness unaffected.

In terms of religion, the predicted probability of being happy, in India and South Africa, was lowest amongst those for whom religion was not important and highest, and significantly so, for those who regarded religion as very important. Table 2.2 shows that in India, the predicted probability of being happy rose from 81.5% for those for whom religion was not important to 85.2% for those for whom religion was very important while, in South Africa, the corresponding rise was from 77.8% to 80.9%. In India, the predicted probability of being happy was significantly higher for those who regarded religion as “very important” than for those who regarded it as “rather important” (85.2% versus 82.7% in Table 2.2). In South Africa, however, there was no significant difference between these two groups in the predicted probability of being happy.

Stark and Maier (2008), in a study of 24 years of the General Social Survey for the USA, found that religion was positively related to happiness but that the link between the two was primarily social rather than doctrinal and was due largely to the fact that religion provided more accessible and supportive social networks, centred around a place of worship, than did its secular alternatives. Lewis and Cruise (2006), however, pointed to a contradiction within the genre of religiosity–happiness studies: while research using the Oxford Happiness Inventory (Argyle, 1987) consistently found religiosity to be positively associated with happiness, research employing the Depression–Happiness Scale (Joseph and Lewis, 1997) consistently found that there was no association between the two. Lewis and Cruise (2006) surmised that it was because there was little theoretical guidance on the relationship between religion and happiness. While, as Stark and Maier (2008) argued, religion might provide supportive social networks, or provide a purpose in life (Seligman, 1988) and hope (Soloman *et al.*, 1991), it might also cause anxiety (Pressman *et al.*, 1992) and promote guilt (Hood, 1992).

In the context of age, the predicted probability of being happy in India was lowest for persons in the youngest, 15–30, age group (Table 2.2: 80.2%) and although this probability was significantly higher

for the older age groups there was no significant difference between the three older groups in their predicted probability of being happy. For South Africa, persons in the oldest age group (60+) had a significantly higher probability of being happy than those in the preceding three age groups (Table 2.2: 84.1%); there was, however, no significant difference between the three earlier groups in their predicted probabilities of being happy.¹¹

2.5. Estimation Results from the Life Satisfaction Equation

The predicted probabilities for low and high life satisfaction are shown in Tables 2.3 and 2.4 for, respectively, India and South Africa. There was no significant difference between persons from the FC and non-FC in their predicted probabilities of low satisfaction but the predicted probability of high satisfaction was significantly higher for persons from the FC than from the non-FC (Table 2.3: 35.1% versus 31.5%). The results for South Africa were exactly the opposite: while there was no significant difference between Whites and non-Whites in their predicted probabilities of high satisfaction, the predicted probability of low satisfaction was significantly lower for Whites than for non-Whites (Table 2.4: 34.8% versus 44.4%).

<Table 2.3 and 2.4 here>

Social contacts, through the importance attached to friends, affected happiness in both countries (as was shown in Table 2.2) but in neither country did it affect life satisfaction. On the other hand, religiosity — which in both countries raised the predicted probability of being happy — also increased life satisfaction: Tables 2.3 and 2.4 show, respectively, that in India and South Africa, persons for whom religion was very important had a significantly smaller predicted probability of low satisfaction — and a significantly larger predicted probability of high satisfaction — than persons for whom religion was not important.¹²

As Table 2.2 showed, the state of respondents' health affected their happiness; it also significantly affected, as shown in Tables 2.3 and 2.4, their life satisfaction. The predicted probability of low satisfaction was significantly smaller for those in good health than for those in poor health (Table 2.3: 29.3% versus 46.1% for India; and Table 2.4: 33.9% versus 58% for South Africa) while the predicted probability of high satisfaction was significantly greater for those in good health than for those in poor health (Table 2.3: 46.6% versus 24.6% for India, and Table 2.4: 33.8% versus 15% for South Africa).

In a similar vein, the social class of respondents in India and in South Africa affected both their happiness (Table 2.2) and their life satisfaction. The predicted probability of low satisfaction was significantly larger for those in the lowest social class than for those in the highest class (Table 2.3: 50.2% versus 30.1% for India, and Table 2.4: 56.4% versus 29.3% for South Africa) while the predicted probability of high satisfaction was significantly greater for those in the highest social class than for those in the lowest class (Table 2.3: 37.9% versus 22.7% for India, and Table 2.4: 35.6% versus 16.7% for South Africa).

The results for education in South Africa provide an interesting contrast between emotional well-being (happiness) and life satisfaction. As Table 2.2 showed, acquiring educational qualifications did not have any significant effect on the predicted probability of happiness in South Africa but, as shown in Table 2.4, it did have a significant effect on life satisfaction. The predicted probability of low satisfaction was significantly smaller for those with high than for those with low qualifications (Table 2.4: 40.5% for university versus 46.9% for elementary) while the predicted probability of high satisfaction was significantly greater for those with high than for those with low qualifications (Table 2.4: 27% for secondary versus 23.7% for elementary). In India, however, education made a significant contribution to both happiness and life satisfaction.

The issue of age also provides a contrast between happiness and life satisfaction. As Table 2.2 showed, age did not have any significant effect on the predicted probability of happiness in South Africa but it did have a significant effect on life satisfaction. The predicted probability of low

satisfaction was significantly higher for those in the 15–30 age group than for those in the 45–60 and 65+ age groups (Table 2.4: 43.8% for 15–30 versus 35.8% for 65+) while the predicted probability of high satisfaction was significantly lower for those in the 15–30 age group than for those in the 45–60 and 65+ age groups (Table 2.4: 23.8% for 15–30 versus 33.5% for 65+). In India, however, both the predicted probability of happiness and that of high life satisfaction increased — and, conversely, that of low life satisfaction decreased — with respondents’ age.

2.6. A Comparison of Happiness between India and South Africa

The previous sections discussed results for happiness and life satisfaction in India and South Africa when each country was considered in isolation. This section turns to a comparison of happiness between the two countries in the context of a model in which the happiness equation is estimated on data *pooled* across India and South Africa. Within this pooled dataset, the variable C was used to define the respondents’ country: for N respondents, indexed $i=1\dots N$, $C_i=1$ if respondent i was from India and $C_i=2$ if respondent i was from South Africa.

Following this, every component of the vector of determining variables, \mathbf{x} , in the happiness equation, was allowed to interact with the country variable, C :

$$Y_i = f(\mathbf{x} \times C_i) \tag{2.3}$$

If, for example, education is a component of the vector \mathbf{x} then, in equation (2.3), the effect of a particular educational achievement on happiness would be contingent on the respondent’s country: the same educational level could affect happiness differently depending on whether the respondent was Indian or South African. Within the context of this “interaction” model, it is possible to test whether the inter-country difference in the effect of a particular variable category (say, university education) on happiness was significantly different from zero.

<Table 2.5 here>

Table 2.5 shows the results of comparing the predicted probabilities of being happy between India and South Africa. The first row of this table shows that the predicted probability of being happy, computed over the 16,879 respondents in the pooled sample, was 84.2% for India and 81.1% for South Africa. As discussed earlier, these predicted probabilities were computed by, first, assuming that all the 16,879 respondents were Indian and, second, by assuming they were all South African, the values of the other variables remaining unchanged, at their observed sample values, between these two scenarios. Thus, the two predicted probabilities, 84.2% and 81.1%, were entirely the product of a “country effect” since nothing else was altered between the two scenarios. The statistical significance of the difference between these two probabilities could be tested by dividing the difference by its standard error to arrive at the associated z-value: the z-value of 3.4 suggested that the predicted probability of being happy was significantly higher in India than in South Africa.

The next two rows in Table 2.5, under the rubric Social Group, compare the predicted probabilities of being happy of, respectively, dominant and subordinate group persons in India and South Africa. The two predicted probabilities for the dominant group — 85.8% and 89% for, respectively, India and South Africa — were computed by regarding all the 16,879 respondents as from the dominant group (that is, FC if they were Indian and Whites if they were South African) and then, first, assuming that they were all Indian and, second, by assuming they were all South African, the values of the other variables remaining unchanged, at their observed sample values, between these two scenarios. Thus, the two predicted probabilities, 85.8% and 89%, were entirely the product of a “country effect”, underpinned by a dominant group base. The z-value of 2.2 suggested that the predicted probability of being happy for dominant group persons was significantly higher in South Africa (where the dominant group was Whites) than in India (where the dominant group was the FC). Conversely, the next row of Table 2.5 shows that the predicted probability of being happy for subordinate group persons — that is, a “country effect”, underpinned by a subordinate group base — was significantly lower in South Africa (79.7%) than in India (83.9%).

The predicted likelihood of men being happy was significantly higher in India than South Africa (Table 2.5: 84.3% versus 80.1%) but there was no significant difference between the two countries in the predicted likelihood of women being happy. In terms of social relations (as represented by the importance of friends), the predicted probability of happiness was greater in India than in South Africa for all three categories of importance — not at all important, somewhat important, and very important. In terms of religiosity, the predicted probability of happiness was greater in India than in South Africa for those for whom religion was very important; there was no significant difference between the countries for the two other categories of importance — not at all important and rather important.

Health and education both offered better prospects for happiness in India than in South Africa. The predicted probability of being happy was greater in India than in South Africa for persons in good health (Table 2.5: 94.3% versus 89.4%), and in fair health (Table 2.5: 86.2% versus 83%), but there was no significant difference between India and South Africa in the predicted probability of being happy for those in poor health. In respect of education, except for those whose highest educational attainment was elementary education (or below), the predicted probability of being happy, for persons at every educational level, was greater in India than in South Africa.

Being married had a greater positive effect on happiness in India than in South Africa — the predicted probability of being happy for married persons was significantly higher in India than in South Africa. In respect of the other marital states — divorced/separated/widowed or never married — there was, however, no significant difference between the two countries in their predicted probabilities of being happy. Not having children, or not having more than two children had a greater positive effect on happiness in India than in South Africa: the predicted probability of being happy for childless persons or persons with no more than two children was significantly higher in India than in South Africa. For persons with three or more children, there was, however, no significant difference between the two countries in their predicted probabilities of being happy.

The very young and the very old were as likely to be happy in India as in South Africa — there was no significant difference between India and South Africa in the predicted probability of being happy for those between the ages of 15 and 30 years or those whose ages were 60 years or more. For the intermediate age groups (30–45 and 45–60), however, the predicted probability of being happy was significantly higher in India than in South Africa.

While there was no difference between the two countries in the predicted probability of being happy for those in full-time employment, this probability was significantly higher in India than in South Africa for four categories of economic status: part-time employees, the self-employed, housewives, and the unemployed. In terms of social class, the predicted probability of being happy for those in the lowest social class and in the lower middle class was significantly higher in India than in South Africa (Table 2.5: 79.1% versus 70.9% and 87.7% versus 85%, respectively) but for the other two social classes — upper/upper middle and working — there was no significant difference between the countries in this probability.

2.7. Happiness, Inequality, and Social Welfare

The estimated happiness equation, the results of which are shown in Table 2.5 for the pooled India-South Africa sample, allows one to predict the probability of being happy, p_i for each respondent i ($i=1\dots N$) in the sample. Suppose that the “happiness utility” of respondents is an increasing function of the probability of their being happy: the utility of the respondent i is defined by a function $U(p_i)$, where $\partial U/\partial p_i > 0$ and $\partial^2 U/\partial p_i^2 < 0$ for all $i=1\dots N$. The last two properties state that utility increases as the probability of being happy rises but it does so at a diminishing rate.¹³

If social welfare, W , is defined as the sum of the individual utilities, then:

$$W = \sum_{i=1}^N U(p_i) \quad (2.4)$$

Since the utility functions are concave (that is, embody diminishing marginal utility), a decrease in the probability of being happy of a “happiness-rich” person, defined as someone with a high p_i , with a concomitant increase in the probability of being happy of a “happiness-poor” person, defined as someone with a low p_i , will raise social welfare. The implication of this is that social welfare will be maximised when inequality in the probability of happiness is eliminated so that everyone has an equal chance of being happy.

In his seminal paper on income inequality, Atkinson (1970) argued that society would be prepared to accept a reduction in average income, from a higher average income which was unequally distributed, *provided the lower income was equally distributed*. Consequently, one could reduce the mean income, \bar{X} , of a country by the amount of intra-personal inequality in incomes to arrive at X^e , the “equally distributed equivalent” (EDE) income where $X^e \leq \bar{X}$. The EDE income, X^e — as the income of every person within the country (that is, equally distributed between the population) — would give the same level of welfare as the (unequally distributed) \bar{X} or, in other words, would be “welfare equivalent” to \bar{X} .

Applying Atkinson’s (1970) model of income to inequality in happiness, given a set of probabilities of being happy, $\{p_1, p_2, \dots, p_N\}$ whose mean is \bar{p} , one can reduce the mean probability in order to arrive at p^e , the “equally distributed equivalent” (EDE) probability which yields the *same* social welfare as the original, unequally distributed, probabilities of being happy:

$$N \times U(p^e) = \sum_{i=1}^N U(p_i) = W \quad (2.5)$$

The EDE probability of being happy, p^e — as the probability of every person within the sample (that is, equally distributed between all the respondents) — would give the same level of welfare as the (unequally distributed) \bar{p} or, in other words, would be “welfare equivalent” to \bar{p} .

The size of this reduction $\bar{p} - p^e$ would depend upon one's degree of "inequality aversion" which Atkinson (1970) measured by the value of an inequality aversion parameter, $\varepsilon \geq 0$. When $\varepsilon = 0$, there was no inequality aversion implying that one would not be prepared to accept *any* reduction in average probability in order to secure a more equitable distribution. The degree of inequality aversion increased with the value of ε : the higher the value of ε , the greater one's aversion to inequality and the greater the reduction in average probability that one would countenance in order to secure an equitable distribution of happiness.

Three special cases, contingent upon the value assumed by ε , may be distinguished (Anand and Sen, 1997):

1. When $\varepsilon = 0$ (no inequality aversion), p^e is the *arithmetic mean* of the individual probabilities: $p^e = \bar{p}$

2. When $\varepsilon = 1$, p^e is the *geometric mean* of the individual probabilities:

$$p^e = \left[\prod_{i=1}^N (p_i)^N \right]^{1/N} < \bar{p}$$

3. When $\varepsilon = 2$, p^e is the *harmonic mean* of the individual probabilities: $p^e = N \sum_{i=1}^N \frac{1}{p_i} < \bar{p}$

The social welfare indices associated with the EDE probabilities $p^e(\varepsilon)$ are:

$$W(\varepsilon) = \frac{[p^e(\varepsilon)]^{1/(1-\varepsilon)}}{1-\varepsilon} \text{ if } \varepsilon > 0 \text{ and } \varepsilon \neq 1 \text{ and } W(1) = \log[p^e(1)] \quad (2.6)$$

2.7.1. Diagrammatic Representation

It may be useful to present the analysis of the preceding paragraphs in diagrammatic terms. Figure 2.1 portrays a world of two persons (R and S) who are required to "share" a given mean probability of being happy, \bar{p} , in terms of their individual probabilities, p_R and p_S . The horizontal axis of Figure 1 measures p_R and the vertical axis measures p_S . The two probabilities are related to the aggregate

probability by the “sharing” equation: $\bar{p} = (p_R + p_S) / 2$ and this is represented in Figure 2.1 by the “sharing possibility line”, MN . The point X , on MN , lies on the 45° line passing through the origin and, so, X is the point at which $p_R = p_S$.

<Figure 2.1>

Given the mean probability, \bar{p} , the observed distributional outcome may be viewed as a mapping of \bar{p} to a point on MN which establishes p_R and p_S . Different outcomes will locate at different points of MN . Those that locate closer to the point X (for example, B) will be more egalitarian than those (like A) which locate further away.

If every person is assigned the same *concave* utility function $U(\cdot)$, then $U(p_i)$ is the utility that person i ($i=R,S$) obtains from a probability of p_i and “social welfare”, denoted by W , is defined as the sum of the utilities of all the persons

$$W = U(p_R) + U(p_S) \quad (2.7)$$

The curves QQ and $Q'Q'$ represent indifference curves associated with the welfare function of equation (2.6), the higher curve (QQ) representing a higher level of utility than the lower curve ($Q'Q'$) and these welfare indifference curves are superimposed upon the sharing possibility line.¹⁴ Since the utility functions $U(\cdot)$ in equation (2.6) are assumed to be concave (that is, embodying the property of diminishing marginal utility), social welfare is maximised when $p_R = p_S$ that is, when both receive the same probability of being happy.¹⁵ Consequently, X is the point at which welfare is maximised and is the point at which the indifference curve, QQ , is tangential to the sharing possibility line, MN . The distribution, however, delivers an outcome at point A at which person R receives a higher probability ($p_R = OF$) and person S a lower probability ($p_S = AF$). The outcome at point A is welfare equivalent to that at point C at which both persons have the same probability of being happy (

$p_R = p_S = CD$). CD is then defined as the equally distributed equivalent (EDE) probability of being happy.

<Table 2.6 here>

The EDE probabilities for India and South Africa are shown in Table 2.6 for three levels of inequality aversion: $\varepsilon=0$ (EDE probability=arithmetic mean); $\varepsilon=1$ (EDE probability=geometric mean); and $\varepsilon=2$ (EDE probability=harmonic mean). The EDE probability for India is always greater than that for South Africa meaning that, at every level of inequality aversion, the mean probability of being happy, \bar{p} has to be reduced by more in South Africa than in India in order to arrive at an equally distributed probability value, p^e which is its welfare equivalent. This is because the probabilities of being happy, $\{p_1, p_2, \dots, p_N\}$, are more unequally distributed in South Africa (Gini coefficient: 0.106) than they are in India (Gini coefficient: 0.088).

Furthermore, the distribution of probabilities in South Africa is more unequal than in India and South Africa's social welfare performance, with respect to happiness, vis-à-vis that of India also suffered on this account. In summary, South Africa had a lower average probability of being happy than India and, combined with a greater inequality in the distribution of probabilities, this meant that the equity-adjusted probability of being happy — the EDE probability — was even lower.

2.8. Conclusions

Using longitudinal data from the WVS, this chapter established that, in general, Indians were happier than South Africans meaning that the predicted probability of being happy was, on average, higher in India (84.2%) than in South Africa (81.1%). Moreover, as Table 2.5 showed, this difference was statistically significant. Another important finding was that persons from the dominant groups were more likely to be happy in South Africa than in India but that persons from the subordinate groups were more likely to be happy in India than in South Africa.

Many of these results are embedded in the history and politics of the two countries. A few years after its independence from British rule in 1947, India adopted a constitution which allowed for special provisions for its “backward castes”. These were affirmative action policies which took the form of reserved seats in the national parliament, state legislatures, municipality boards and village councils (*panchayats*); the reservation of jobs in government or in publicly funded or publicly assisted organisations; and reserved places in public higher educational institutions. The beneficiaries of these “reservation” policies were Dalits and the Scheduled Tribes. In 1990, the Mandal Commission’s recommendation that, in addition to the 23% of jobs and higher education places reserved for Dalits and the Scheduled Tribes, a *further* 27% be reserved for the OBC was accepted and implemented by the government. Thus, apart from Muslims, all the persons included in the non-FC category in the WVS sample for India have, since 1990, benefited from “reservation policies”.

Affirmative action in India, which has been based on the setting of explicit quotas, is closely linked to the lowering of admission/employment standards for persons not from the FC in order to help fill these quotas. Indeed, information for India on its elite Indian Institutes of Technology (IIT) shows that, in the academic year 2014–15, they admitted 2,029 Dalit students and 856 students from the Scheduled Tribes of whom only 432 and 80, respectively, would have secured admission in open competition based on examination performance. Thus, on average, for every “reservation-unassisted” Dalit and ST student admitted to an IIT, 3.7 “reservation-assisted” Dalit students and 8.5 “reservation-assisted” Scheduled Tribe students were also admitted (Vishnu, 2015). Therefore, the *general* level of happiness among persons from the non-FC group could, plausibly, be on a par with those from the FC, notwithstanding specific areas of discontent.¹⁶

A fundamental difference between caste and race, however, is that the issue of caste — specifically where Dalits, who comprised 34% of the 4,304 non-FC persons in the estimation sample, are concerned — is intimately associated with the concept of “untouchability” whereby physical contact by a person from the FC with a Dalit is “polluting”.¹⁷ Race, however, does not carry such

connotations. Much of caste-related avoidance of contact occurs in specific settings (hospitals, schools, labour markets) and to specific subgroups (lower and working classes) and this may explain why expressions of unhappiness by non-FC persons are framed with respect to specific contexts.¹⁸

The history of race relations in South Africa could not be more different from that of caste relations in India. Between 1948 and 1994, South Africa had a formal apartheid system of government — exemplified by its harsh, institutionalised system of racial segregation — which was only ended in 1994 by a democratically elected government, based on universal franchise. The legacy of apartheid was deep-rooted differential treatment of the “non-White” population of South Africa (Archibong and Adejunno, 2013). Since 1994, affirmative action policies in South Africa have been based on equal opportunities — “promoting equal opportunities for people to empower them so as to have full engagement in the society” (idem, p.6). Therefore, the *general* level of happiness among persons from the non-White group could, plausibly, be lower than that of Whites but, unlike India, without there necessarily being specific areas of discontent.

References

- Anand, S. and A. Sen (1997), “Concepts of Human Development and Poverty: A Multidimensional Perspective”, *Human Development Report 1997 Papers*, New York: UNDP.
- Angner, E., Ray, M.N., Saag, K.G., and Allison, J.J. (2009), “Health and Happiness Among Older Adults: A Community Based Study”, *Journal of Health Psychology*, **14**: 503–512.
- Archibong, U. and Adejumo, O. (2013), “Affirmative Action in South Africa: Are We Creating New Casualties?”, *Journal of Psychological Issues in Organizational Culture*, **3**: 14–27.
- Argyle, M. (1987), *The Psychology of Happiness*, London: Routledge.
- Atkinson, A.B. (1970), “On the Measurement of Inequality”, *Journal of Economic Theory* **2**: 244–263.

- Boddy-Evans, A. (2019), “The Origins of Apartheid in South Africa” ,
<https://www.thoughtco.com/when-did-apartheid-start-south-africa-43460> (retrieved 30
 November 2019).
- Borooah, V.K. (2006), “What Makes People Happy? Some Evidence from Northern Ireland”, *Journal of Happiness Studies*, **7**: 427–465.
- Borooah, V.K. (2017), “Caste and Regional Influences on the Practice of ‘Untouchability’ in India”,
Development and Change, **48**: 746–774.
- Borooah, V.K., Sabharwal, N.S., Diwakar, D.G., Mishra, V.K., and Naik, A.K. (2015), *Caste, Discrimination, and Exclusion in Modern India*, New Delhi: Sage Publications.
- Clark, A., Fieche, S., Layard, R., Powthavee, N. and Ward, G. (2018) *The Origins of Happiness: The Science of Happiness over the Life Course*, Princeton, NJ and London: Princeton University Press.
- Demir, M., Ozdemir, M., and Weitekamp, L.A. (2007), “Looking to Happy Tomorrows with Friends: Best and Close Friendships as they Predict Happiness”, *Journal of Happiness Studies*, **8**: 243–271.
- Diener, E., Oishi, S., and Lucas, R.E. (2009), “Subjective Well-Being: The Science of Happiness and Satisfaction”, in S.J. Lopez and C.R. Snyder (eds.), *The Oxford Handbook of Positive Psychology*, pp. 187–194. Oxford: Oxford University Press.
- Doniger, W. and Smith, B.K. (1991), *The Laws of Manu*, New Delhi: Penguin Random House India.
- Gerdtham, U-G. and Johannesson, M. (2001), “The Relationship Between Happiness, Health, and Socio-Economic Factors: Results Based on Swedish Microdata”, *The Journal of Socio-Economics*, **30**: 553–557.
- Guha, R. (2007). “Adivasis, Naxalities, and Indian Democracy”, *Economic and Political Weekly*, **XLII**: 3305–3312.
- Helliwell, J.F. and Huang H. (2013), “Comparing the Happiness Effects of Real and On-Line Friends”, PLoS ONE 8(9): e72754. <https://doi.org/10.1371/journal.pone.0072754>.
- Hood, R.W. (1992), “Sin and Guilt in Faith Traditions: Issues for Self-Esteem”, in J. F. Schumaker (ed.), *Religion and Mental Health*, pp. 110–121, Oxford: Oxford University Press.

- Inglehart, R., Haerpfer, C., Moreno, A., Welzel, C., Kizilova, K., Diez-Medrano, J.Purnanen, B. et. al. (eds.) (2014), *World Values Survey: All Rounds- Country Pooled Datafile 1981-2014*, Madrid: JD Systems Institute.
- Islam, G., Wills-Herrera, E., and Hamilton, M. (2009), “Objective and Subjective Indicators of Happiness in Brazil”, *The Journal of Social Psychology*, **149**: 267–271.
- Joseph, S. and Lewis, C.A. (1997), “The Francis Scale of Attitude Towards Christianity: Intrinsic or Extrinsic Religion?”, *Psychological Reports*, **80**: 609–610.
- Kahneman, D. and Deaton, A. (2010), “High Income Improves Evaluation of Life but Not Emotional Well-Being”, *Proceedings of the National Academy of Sciences of the United States of America*, **107**: 16489–16493.
- Knight, J. and Gunatilaka, R. (2014), “Subjective Well Being and Social Evaluation”, in A. Clark and C. Senik (eds.), *Happiness and Economic Growth*, pp. 179–215. Oxford: Oxford University Press.
- Lewis, C.A. and Cruise, S.M., (2006), “Religion and Happiness: Consensus, Contradictions, Comments and Concerns”, *Mental Health, Religion & Culture*, **9**: 213–225.
- Long, J.S. and Freese, J. (2014), *Regression Models for Categorical Dependent Variables using Stata*, College Station, TX: Stata Press.
- Loury, G.C. (2002), *The Anatomy of Racial Inequality*, Cambridge, MA: Harvard University Press.
- Moro, M., Brereton, F., Bullock, C., Clinch, J. P., Ferreira, S. and Monnet, J. (2006), *Understanding and Measuring Quality of Life in Ireland: Sustainability, Happiness and Well-being*, Dublin: University College Dublin (Open Access publications from University College Dublin).
- Patterson, O. (1982), *Slavery and Social Death*, Cambridge, MA: Harvard University Press.
- Pressman, P., Lyons, J.S., Larson, D.B. and Gartner, J. (1992), “Religion, Anxiety and Fear of Death”, in J.F. Schumaker (ed.), *Religion and Mental Health*, pp. 98–109, Oxford: Oxford University Press.
- Sachar Committee Report (2006), *The Social and Economic Status of the Muslim Community in India*, New Delhi: Government of India (Cabinet Secretariat).

- Sachs, J. (2012), “Introduction”, in J. Helliwell, R. Layard and J. Sachs (eds.), *World Happiness Report*, pp. 2–9, New York: Sustainable Development Solutions Network.
- Seligman, M.E.P. (1988), “Boomer Blues”, *Psychology Today*, October: 50–55.
- Shah, G., Mander, H., Thorat, S., Despande, S. and Baviskar, A. (2006), *Untouchability in Rural India*, New Delhi: Sage Books.
- Soloman, S., Greenberg, J. and Pyszczynski, T. (1991), “Terror Management Theory of Self-esteem”, in C.R. Snyder and D.R. Forsyth (eds.), *Handbook of Social and Clinical Psychology: The Health Perspective*, pp. 21–40. Elmsford, NY: Pergamon Press.
- Stark, R., & Maier, J. (2008), “Faith and Happiness”, *Review of Religious Research*, **50**: 120–125.
- Vishnu, U. (2015), “They Get Leg-up at JEE but Hard Landing on Campus”, *Indian Express*, 6 August.
- Worden, N. (2000), *The Making of Modern South Africa*, Oxford: Blackwell Publishing (3rd Edition).

Notes

¹ Self-reporting as a form of eliciting information about subjective well-being — whether happiness or life satisfaction — raises the question of whether superior alternatives to self-reporting, in obtaining such information, might emerge in future (Diener *et al.*, 2009).

² These three castes are said to have come from Brahma’s mouth (*brahmin*), arms (*kshatriya*), and thighs (*bania*). This is termed the *Purusasukta* legend which appears in an appendix to the *Rig Veda*.

³ See Worden (2000) for a history of apartheid in South Africa.

⁴ See: “Indian History Sourcebook: The Laws of Manu, c. 1500 BCE translated by G. Buhler”, Fordham University: <http://www.fordham.edu/halsall/india/manu-full.asp>.

⁵ See Borooah (2017) for a discussion of the practice of untouchability in Hindu homes.

⁶ These options, which are only available from STATA 14.0 onwards, are very demanding of computing power.

⁷ The reason for this is that the logit or multinomial logit estimates themselves can only be interpreted as odds-ratios or risk-ratios and not in terms of the underlying probabilities.

⁸ See: <https://www.stata.com/manuals13/rmlogitpostestimation.pdf>.

⁹ It is important to draw a distinction between the *estimation* sample and the *total* sample; because the equation can only be estimated for non-missing values on *all* the variables, the estimation sample will, typically, be smaller than the total sample.

¹⁰ In operational terms, these hypothetical scenarios are constructed in STATA by estimating the logit equation and then using the predict command *after* the command “replace $X_{ii}=1$ ” has been executed: the average of these predictions over the N households will yield \tilde{p}^D ; next, use the predict command *after* the command “replace $X_{ii}=2$ ” has been executed: the average of these predictions over the N households will yield \tilde{p}^S . In practice, STATA’s margin command will perform these calculations.

¹¹ Marital status did not affect the predicted probability of being happy in India but, in South Africa, married persons were predicted to have a significantly greater chance of happiness than those who were single or separated/divorced/widowed. The number of children, however, did not affect the predicted probability of being happy in South Africa but in India persons with three or more children were predicted to have a significantly smaller chance of happiness than those who were either childless or had fewer than three children.

¹² Comparing those for whom religion was not important with those for whom it was very important, Tables 2.3 and 2.4 show, respectively, that the predicted probability of low life satisfaction was 41.2% and 37.1% for India and 48.8% and 41.1% in South Africa. Conversely, under the same comparison, the predicted probability of high life satisfaction was, respectively, 28.2% and 35.1% for India and 19.2% and 27.2% in South Africa.

¹³ Equivalently, the function $U(.)$ is assumed to be concave so that marginal utility diminishes for an increase in p_i .

¹⁴ An indifference curve shows the different combinations of p_R, p_S which yield the same level of welfare. It is obtained by holding W constant in equation (2.6) and solving for the different p_R, p_S which yield this value of W .

¹⁵ Because of concavity, an egalitarian transfer from R to S will increase welfare: the gain in utility to S will exceed the loss to R . Welfare will be maximised when no further net gain is possible, that is, when $p_R = p_S$.

¹⁶ It should also be pointed out that Indian's reservation policies in favour of the non-FC have caused unhappiness among the FC members who have been the losers. The extension of reservation to the OBC in 1990 triggered a wave of "anti-Mandal" rioting in India by aggrieved members of the Forward Castes.

¹⁷ As Shah *et al.* (2006, p.14) state, "untouchability is the avoidance of physical contact with persons and things because of beliefs relating to purity and pollution...[it] is an intrinsic feature of the Hindu caste system...[it] is all pervasive, classifying people according to hierarchy and prescribing how they should interact".

¹⁸ See Borooah *et al.* (2015) for details of the forms that untouchability takes in India.