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Minorities in Rural China: Poorer but Inherently Happier?

John Knight[#*], Li Shi[*] and Yuan Chang[*]

Abstract

This is a pioneering study of the determinants of the subjective well-being of ethnic minority people in rural China, using a specially designed sample survey relating to 2011. The underlying hypothesis is that the lifestyle and attitudes of ethnic minorities contribute to their happiness. Five related hypotheses are tested. The minority group is equally happy as the Han group. However, whereas minorities' much lower income reduces their happiness, this disadvantage is neutralised by their greater inherent capacity for happiness - much of it derived from personal relationships but not, it seems, from lesser materialism or concentrated living together. There is evidence of considerable heterogeneity in happiness across various ethnic minorities. Suggestions are made for further research, including analysis of the (positive) effects of lifestyle against the (negative) effects of perceived discrimination. There is a deeper question with which the paper connects: if subjective well-being is accepted as a criterion for social evaluation, does economic development produce cultural change for the better or for the worse?

Key words: China; Culture; Ethnic minorities; Happiness function; Lifestyle; Subjective well-being

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Department of Economics, University of Oxford

* Respectively, Visiting Professor, Professor, and Research Student at the School of Economics and Business Administration, Beijing Normal University.

1. Introduction

There is a rapidly expanding literature on the economics of happiness, that is, the determinants of subjective well-being. Happiness functions have been estimated in many countries, and also in China. The empirical results are generally plausible and robust. Although their use for policy purposes remains controversial, there is a growing willingness to consider their relevance for policy making (for instance, O'Donnell, 2013)[1].

One of the important issues in the happiness literature concerns the relative importance of material determinants of happiness (such as income and wealth) and of other, non-material, determinants (such as personal relationships, social networks, strength of community, and cultural heritage). We use an appropriate data set for rural China to explore this issue. It is plausible, for instance, that some ethnic minority people place more emphasis on the non-material aspects of life than do ethnic Han people. The intention is therefore to compare the subjective well-being of minority people and Han people in rural China. To the best of our knowledge, this is virgin research territory.

Section 2 provides a brief literature survey which helps to frame the research. Section 3 explains the data set to be analysed. Section 4 sets up the hypotheses to be tested and provides the testing methodology. Section 5 tests the five hypotheses in turn. Section 6 draws conclusions and implications, both for minorities in rural China and more generally.

2. Literature Review

Examination of the literature on the economic and social circumstances of minority groups in China suggests that a study of rural rather than urban people will be more fruitful for this issue. Minority people in cities are a small self-

[1] Gus O'Donnell was Britain's top civil servant in the years 2005-11.

selected group, many of whom have been assimilated into urban life. Analysis of wage functions indicated that by 2002 minorities were no longer at a conditional wage disadvantage by comparison with Han people (Knight and Song, 2008). By contrast, in rural China many minority people are to be found concentrated together in minority areas, often in remote, mountainous, poor places, and disproportionately in western China (Bhalla and Qiu, 2006, Gustafsson and Wei, 2000). Riskin and Li (2001: 337-8), accepting the official definition of rural poverty, calculated that minority people represented 14% of the 'poor' in 'non-poor' areas and 25% in 'poor' areas – both percentages being much higher than the percentage of minority people in the total rural population. This implies that a higher proportion of minority people are poor, and that poor minority people are concentrated in areas that are poor. This concentration might be due to distant history: the minorities might have been driven into such places by the expanding and dominant Han population.

It is plausible that many minority people have retained their customary and traditional culture and way of life, and that they feel part of the community of the locally resident minority group. That is a possibility worth examining. However, it is also possible that minority people perceive discrimination against themselves, and that this perception reduces their happiness. Despite the official policies outlawing discrimination and indeed supporting forms of affirmative action, minority people might in their everyday lives encounter powerful competition from Han people or dominance of Han culture.

A problem that besets many empirical comparisons of two groups is self-selection, that is, the possibility that people sort themselves into the group of their choice. For instance, minority people might try to pass as Han to avoid discrimination, and Han people might try to pass as minority to benefit from affirmative action policies. This problem is unlikely to be important in our data set. People are classified into one of China's 56 nationalities at birth, and this classification is reported on the residence registration (*hukou*) certificates.

There is a vast literature on the economics of happiness but a much smaller literature on the economics of happiness in China. Three papers have singled out

rural people for analysis, using the rural sample of the China Household Income Project (CHIP) 2002 national survey: Knight et al. (2009), Knight and Gunatilaka (2010, 2012). The estimated happiness functions showed the following features that may have relevance to the current research.

First, the conventional economic variables raise happiness, in line with basic economic theory, but the contributions of the absolute levels of income and wealth are surprisingly weak, both substantively and by comparison with the contribution of other explanatory variables.

Second, happiness is not only a positive function of income but also a negative function of aspirations, and the latter appears to be governed by the income of the reference group. The reference group is likely to be determined by information sets and by social interactions. Most rural people confine their reference group to the village: their orbits of comparison are narrow. Happiness is highly sensitive to people's perceived position in the village income distribution. Thus, the effect of a rise or fall in own income on personal happiness would be offset by any simultaneous rise or fall in village income.

Third, community variables also play a role in determining individual happiness. This appears to reflect the influence of public funding of local services and infrastructure, as proxied by such variables as income per capita in the relevant jurisdiction, satisfaction with the village clinic, or the view that its spokesman represents the interests of the village.

Fourth, attitudes are also associated with the happiness score. Proxies for the quality of, and importance attached to, personal relationships tend to raise happiness, and a measure of the degree of personal materialism tends to lower it. Thus, people who derive their satisfaction with life more from personal relationships and less from material goods and services appear to be happier.

Fifth, the inclusion of an ethnic minority dummy variable in the happiness functions produces positive coefficients, some of which are statistically significant. Thus, with everything else being held constant, minority people are on average happier than Han people.

3. The Data

The issue that we address is not a trivial one: the wellbeing of rural China's many ethnic minority people is itself important. They numbered at least 76 million in 2010, representing at least 8.4% of the rural population.[2] The China Household Ethnic Survey (CHES) of 2011 (conducted in 2012 but relating largely to 2011) covers seven provinces: Inner Mongolia, Ningxia, Xinjiang, Qinghai, Guangxi, Guizhou, and Hunan. The three rural questionnaires and corresponding data sets were used to estimate rural happiness functions. The individual data set included 31,615 people, the household data set 7,257 households, and the village data set 763 villages. The number of (rural) counties surveyed was 136. Thus, there were on average 53 households per county, and normally 6 villages per county and 10 households per village. The number of households sampled in each province varied from 870 to 1200, and the number of villages per province varied from 97 to 133.

The selected survey areas contain many minority people, so they are not representative of China as a whole. For our purposes it is important to compare minority people with Han people. It is therefore helpful that 48% of the rural sample were of Han nationality. In order of numerical importance the minority nationalities were Miao (15%), Hui (9%), Dong (8%), Uygur (7%), Zhuang (6%) and Tibetan (5%); another 28 nationalities were represented, many by only a very small number of people.

It was necessary to convert our two income variables from nominal to real terms. The method was to use the rural price levels estimated by Brandt and Holz (2006) at province level for 2002 and so obtain purchasing power parity for that year. These estimates of purchasing power parity were updated to 2011, the time of the

[2] The precise number of ethnic minority people in rural China does not appear to be published in official statistics. We apply the proportion of minority population in China's total population (8.4%) to the rural *hukou* population but regard this number as the lower limit.

survey, by means of the official rural consumer price indexes available annually at province level.

The questions that would be most relevant to the research hypotheses were designed for inclusion in the rural questionnaire. The three dependent variables used in this paper are set out in Table 1, which shows percentage distributions and mean values. The question (normally asked of the household head, but the respondent is identified) "how happy are you nowadays?" permitted five substantive answers: very happy, happy, so-so, not happy, not at all happy. These answers are converted into a cardinal score, with very happy having a value of 4 and not at all happy a value of zero. A second question "how satisfied are you with your current income?" permitted five equivalent answers, ranging from very satisfied (given a value of 4) to not at all satisfied (with value 0). A third question asked for the minimum amount of cash income needed to sustain the household for a year; this is converted into the minimum income per capita for the household.

We see that the average value of the happiness score is 2.34 for both the minority group and the Han group. Their scores are the same despite the finding (in Table 2) that the average annual minority income per capita (Y7,287) is only 58% of the corresponding Han figure (Y12,600). The average minority score for satisfaction with income (1.72) is higher than the average Han score (1.68). This apparent inconsistency is partly to be explained by the difference in minimum income required. The minority annual average minimum income (Y10,087) is only 88% of the Han average (11,419).

Five explanatory variables, being important to the analysis, are reported in Table 2. Household income per capita is calculated from detailed information collected; it is the same variable that is used by other project members. The question: "how does the household's income level compare with others' in the village?" permitted five substantive answers: much above average, above average, average, below average, much below average; scoring from 4 to 0 respectively The three questions: "how important are family/friends/income to you?" each permitted five degrees of importance: very important, important, so-so, not important, not at all important, which were cardinalised in the way explained above.

Minority people perceive themselves to be ranked lower in the village income distribution than do Han people: their average scores were 1.82 and 1.88 respectively. There is very little difference between the two groups in their scoring of the importance of family, of friends, and of income. We do, however, see the great importance of family (very important for at least 86% of respondents) and of income (very important for at least 83%) in China's rural society.

Although a total of 7,257 households were sampled in the rural survey, the analysis required to answer our research questions involves considerable attrition. There are two main reasons. First, although 7,214 households responded to the question about happiness, the household member who answered the question was frequently not identified (despite the questionnaire requirement), yet this information is needed for the estimation of happiness functions. The individual was identified in 4,782 cases., of which 4,632 have information on both ethnicity and happiness. This is effectively the sample used in the descriptive Tables 1 and 2. Second, the large number of non-responders and 'don't knows' for the twelve variables used in the basic happiness functions confine the number to 3,596 observations, and missing values of an additional three variables reduce the sample further to 3,417. These are effectively the samples used in the happiness equations of Table 3 and 4.

Attrition from the sample raises the question of whether selective withdrawal of households biases our results. Because much of the analysis involves a comparison of Han and minority people, it is important to know whether the basis of withdrawal affects the Han and minority samples differently. Attrition that was due to the failure of some interviewers to identify the household member answering the happiness question was likely to be random. Attrition due to other forms of non-response and don't know replies appeared to affect the Han and minority samples differently: 21% of Han households were lost in that way, and 25% of minority households. We get a possible indication of the extent of bias by estimating the happiness of the two ethnic groups for the samples containing 7,214, 4,783, 3,596 and 3,417 households. Average happiness scores for Han people were 2.40, 2.34, 2.36, and 2.37 respectively; and for minority people 2.42,

2.34, 2.33, and 2.35 respectively.[3] By that simple criterion, attrition does not appear to create serious bias, but this limitation of our data set requires the exercise of caution in drawing conclusions.

4. Hypotheses and tests

The basic hypothesis is:

1. Correcting for their lower income, minority people have higher conditional happiness than Han people.

Whereas the valuation systems of minority people – based on culture, community or taste – may well raise happiness, experiences or perceptions of discrimination are likely to lower it. Hypothesis 1 therefore depends on whether the positive effect of attitudes outweighs the negative effect of discrimination.

The finding of a difference in the conditional average happiness score of Han and minority people requires investigation of its causes, involving a second hypothesis:

2. The determinants of minorities' happiness are also different, and more dependent on non-material things.

Subjective well-being functions are estimated (we use the terms subjective well-being, happiness, and life satisfaction interchangeably). The dependent variable is based on the question about happiness (five levels, converted into a cardinal score). The explanatory variables are individual, household, and community characteristics. The choice of explanatory variables is influenced by Knight et al. (2009) and Knight and Gunatilaka (2010, 2012).

The initial objective is to find out whether there is an absolute, and a conditional, difference in happiness between minority and Han people. The estimation of

[3] In the case of the largest sample, assuming that, where the ethnicity of the respondent was not available, it was the same as that of the household head.

separate minority and Han happiness functions can establish whether happiness is determined differently for the two groups. The reasons for differences are examined by means of decomposition analysis.

The analysis is then deepened in order to better understand the reasons for the happiness results. This can be done in two ways. First, it is possible to divide minority people into different ethnic groupings (some five nationalities have sufficient observations for that purpose). This leads to the hypothesis:

3. There is heterogeneity among minority groups, which might have non-economic origins

   It is plausible that feeling part of a close community is important for a person's happiness. We explore this by dividing minority people who belong to the largest ethnic group in their community and those who do not. The hypothesis is that:

4. Minority people who live in communities where their ethnic group is the largest are happier, ceteris paribus, than those who do not.

   Minority people might show more (conditional) satisfaction with income and require less (conditional) minimum income than do Han people. The research estimations are replicated by introducing two more independent variables: answers to the question about satisfaction with income (five levels, converted into a cardinal score), and answers to the question about the minimum income required. These dependent variables are used to examine a further hypothesis:

5. Minority people show less conditional concern with income than do Han people, and place less conditional value on it.

   The choice of explanatory variables in these equations is influenced by Knight and Gunatilaka (2012), which analyses these dependent variables.

6. Testing the Five Hypotheses

Hypothesis 1. Correcting for their lower income, minority people have higher conditional happiness than Han people.

Table 1 showed that minority people and Han people have the same unconditional happiness score, whereas the income per capita of minority households is much lower than that of Han households. Table 2 showed that minority people come further down in the income distribution of their (administrative) villages. Both absolute income and relative income are likely to influence happiness, to the disadvantage of minority people. Thus, in order to identify the pure effect of minority status, it is necessary to estimate happiness functions.

Hypothesis 1 is tested by means of happiness functions which include minority status as a dummy variable, with Han status as the omitted category (Table 3). Column 1 shows the unconditional effect of minority status: its coefficient is trivially negative and not at all significant. Column 2 adds the explanatory variables that are found in happiness functions around the world. Age has the usual u-shaped relationship with happiness, women are less happy than men (whereas the CHIP 2002 rural survey showed men to be the less happy sex), and education has no independent effect. Income per capita has a highly significant positive coefficient. However, it implies that even a doubling of income per capita raises the happiness score by only 0.13 points. The most important result, however, is that the coefficient on minority status is now significantly positive, adding 0.08 points to the happiness score.

Column 3 adds the dummy variables showing reported income position within the village. There is a huge and monotonic effect: the range between being much above and much below the village average income exceeds 1.80 points. The coefficient on absolute income per capita is much reduced but still highly significant. (It is the great variation in average income per capita among the sample villages that enables us to distinguish absolute and relative income effects). Minority status was performing some of the work that was really being done by relative income: the coefficient on minority status is reduced to 0.05, albeit still significant. The addition of province dummies in column 4 makes almost no difference to the column 3 results except that, while having a slightly higher value, the coefficient on minority status just loses its significance. Five of the six other provinces have conditional happiness that is higher than in Hunan, the reference province.

Three conclusions can be drawn. First, our well-behaved happiness functions make it possible to identify the pure effect of minority status on happiness. Second, the conditional effect of minority status on happiness is indeed positive. Third, because both absolute income and relative income raise happiness, it is likely that the disadvantage of minority people in these respects helps to pull down their absolute happiness.

Hypothesis 2. The determinants of minorities' happiness are also different, and more dependent on non-material things.

This hypothesis is tested by estimating separate happiness functions for minorities and for Han people (Table 4), and by means of decomposition analysis of the contributory differences in the determinants of happiness (Table 5). Columns 1 and 2 of Table 4 show three interesting differences between minority and Han people. First, years of education appears to have a negative effect on happiness for minority people and a positive effect for Han people. Second, income is more important for the happiness of minorities than it is for the Han. Third, being much below the average village income is particularly harmful to the happiness of minority people. The introduction of province dummies in columns 3 and 4 indicates that (relative to the reference province, Hunan) the conditional happiness of minority people is higher than that of Han people in Guangxi, Ningxia and Inner Mongolia but lower in Xinjiang.

The attitudinal questions enable us to assess whether differences in attitudes are important in explaining differences in happiness of the two groups. Whereas the scores indicating the importance attached to family and to friends have a greater effect on happiness for minorities than for Han, the score indicating the importance attached to income has a larger negative effect for minorities (and indeed the effect is significant only in their case): being more materialistic hurts the minorities more than it does the Han.

The fact that the happiness functions of the two groups differ in some respects implies that a decomposition analysis is needed in order to identify the pure effect of minority status on happiness. A standard Blinder-Oaxaca decomposition analysis is

presented in Table 5. It distinguishes that part of the mean difference in happiness score which is due to differences in the explanatory variables of the two groups (the 'explained' part) and that part which is due to differences in the coefficients of their happiness functions (the 'unexplained' part). The analysis is based on the coefficients estimated in Table 4 (columns 3 and 4) and the mean values of the explanatory variables used in those columns.

Table 5 shows the difference in actual mean happiness scores to be 0.019 in favour of the Han group. However, a difference of no less than 0.156 points can be 'explained', and there is an 'unexplained' residual of -0.137 points. Their superior 'endowments' of happiness-generating resources (such as higher absolute income and higher relative income within the village) raise the happiness of Han people by far more than their actual advantage in mean happiness. However, the greater intrinsic capacity of minority people to be happy (their superior happiness functions) raises their happiness so much that it nearly compensates for their disadvantage in endowments. A detailed breakdown of the decomposition (not reported) shows that the contributions that are most important (and also statistically significant) to the 'explained' advantage of the Han group are income (0.035) and the relative income terms (0.028); and to the 'unexplained' advantage of the minority group the score indicating the importance of family (-0.35) and friends (-0.476). The absolute and relative income of Han people is higher, but minority people place far more value on personal relationships.

Hypothesis 3. There is heterogeneity among minority groups in the determinants of happiness, which might have non-economic origins.

This hypothesis is tested by estimating happiness functions in which the different minority groups appear as dummy variables, with Han nationality as the reference category (Table 6), and by estimating separate happiness functions for the different minority groups in order to understand the reasons for the differences in conditional happiness (Table 7). Table 6 has five columns: column 1 shows the specification with just a set of dummy variables representing the different minorities; column 2 adds the explanatory variables conventionally found in

happiness functions; column 3 also contains the village relative income dummies; and column 4 adds the set of province dummy variables.

We start with column 1. The actual average happiness scores of the Mongol and Hui people are significantly higher than for the Han, those of the Tibetans and Dong are not significantly different, and those of the Uygur, Miao, Zhuang and the residual category of 'other minorities' are significantly lower. Turning to columns 2 and 3: by comparison with the Han, the Mongols, the Hui, the Tibetans and the Dong have higher conditional happiness. The Zhuang are on a par with the Han, but the Uygur, the Miao, and the residual category appear to be less happy. The other coefficients of these two columns are little different from the corresponding coefficients in Table 3.

There is, however, a problem in measuring the pure effect of each nationality on happiness. Do the observed differences in happiness reflect the effect of a particular minority or the effect of the province in which that minority mostly lives? An attempt to separate these effects is shown in column 4, which contains province dummies as well as nationality dummies. The coefficients on Mongols, Hui and Dong remain significantly positive and that on 'other minorities' remains significantly negative, but those on Tibetans, Miao and Zhuang are now not significantly different from zero. However, it is the Uygurs who are the outlier group: their negative coefficient is increased to no less than -0.69.

An alternative method of estimating the pure effect of nationality is to make the plausible assumption that the effect of province on happiness is the same for all respondents irrespective of nationality. In a first stage equation the effect of province on happiness is estimated without including nationality dummy variables. The coefficients derived in this way are incorporated in the second stage equation as province constant terms. The coefficients on nationality can thus be derived with province effects controlled. The results are shown in column 5. The coefficients in columns 4 and 5 are remarkably similar. The only notable difference is that the coefficient on Zhuang nationality is significantly positive in column 5. Sociological, anthropological or political analyses may be needed if we are to understand this pattern of results for the different nationalities.

Table 7 compares happiness functions for four nationalities, the Hui, the Dong (both having high absolute and conditional happiness), the Miao (with low absolute but not conditional happiness), and the Uygur (with low absolute and also conditional happiness). There is a problem of small numbers, especially in the case of the Uygurs, and for this reason most coefficients are not statistically significant. Log income per capita has a significantly positive coefficient only for the Hui, but in all four cases the relative village income dummy variables have monotonic significant coeffiecients.

The three attitudinal variables of Table 7 are the most helpful. The importance attached to family raises happiness in three cases, especially for the Hui. The importance attached to friends raises happiness in three cases, and especially for the Uygur. The greater the importance attached to income, the lower is happiness in all four cases. The negative coefficient is by far the largest in the case of the Uygur. This suggests that having high aspirations for income is bad for happiness, and that the relatively low happiness of the Uygur might be due to their particular sensitivity to such aspirations.

Hypothesis 4. Minority people who live in communities where their ethnic group is the largest are happier, other things being equal, than those who do not.

Our concern is to find a good proxy for the strength of community and of social networks that minority people enjoy. One criterion is that a particular ethnic group predominates in the locality. Unfortunately, the sampling method does not permit use of the sample proportions in the village or the county as a guide to the local importance of an ethic group; nor are the census proportions available. Our solution is to use a question in the village questionnaire about the largest ethnic group in the (administrative) village. This information enables us to specify and test the hypothesis by comparing happiness functions for minority people who belong to the largest ethnic group with those who do not (Table 8).

The table has three columns. Instead of including minority status as a dummy variable, we divide minority status into two dummy variables: minority households in the largest ethnic group and those not in the largest ethnic group. 80% of

minority people belong to the largest minority group of the village. If strength of community and of social networks are important for happiness, and if minority people who belong to the largest ethnic group have a stronger sense of community, the prediction is that minority households which belong to the largest ethnic group will have a higher coefficient than those who do not.

Because 'Han villages' (those in which Han people are the largest ethnic group) are likely to be richer, minority people in these villages might well be happier than those in 'minority villages', whether or not they are members of the largest ethnic group. We exclude Han villages, and also Han people, and treat minority people who are not in the largest ethnic group as the omitted category. The hypothesis, therefore, is that the coefficient on minority people who are in the largest ethnic group is significantly positive. Column 1 is estimated on that basis and has a full set of conditioning variables (except provinces). It shows the dominant group coefficient to be positive but not significantly so. Column 2 attempts in addition to correct for possible self-selection. It does so by eliminating people who do not have a local *hukou* and also those who acquired a local *hukou* only after the age of 15. Again, the test coefficient is positive but not significant. In case the extent of village resources or facilities plays a role, column 3 adds several such variables to the initial equation: the village is in a mountainous area; has a health station; is connected by road; and its distance to the nearest middle school. All but one of the four has the expected sign and two are significantly different from zero. (The robust result that happiness is reduced if the village is connected by road implies that 'ignorance is bliss'.) However, correction for village endowments has no effect on the relevant coefficient: it is positive but not significant. We can find no evidence in support of the hypothesis that being a member of the largest minority group in the village contributes to subjective wellbeing.

Hypothesis 5. Minority people show less conditional concern with income than do Han people, and place less conditional value on it.

This hypothesis is tested by means of equations predicting 'the degree of satisfaction with income' which include a minority group dummy variable with Han nationality

as the reference category (Table 9), and equations predicting 'the income required for a satisfactory life', again including a minority group dummy variable with Han nationality as the reference category (Table 10).

Table 9 has four columns: the first contains only minority status, the second adds the conventional determinants of satisfaction with income, the third adds also the relative income dummy variables, and the fourth contains province dummies as well. Minority status has a positive coefficient in each case but the coefficient is significant only in column (2). In that column the coefficient on log income is significantly positive. The difference between columns (1) and (2) is that, once the effect of their lower income is eliminated, minority people are indeed more easily satisfied with income.

We see in columns (3) and (4) that income relative to the village average has a powerful effect on satisfaction with income, and that it is relative income within the village rather than absolute income that matters. In Table 2 the average value of relative income is 1.82 for minority and 1.88 for Han, whereas the average income per capita ratio is much greater: Y7,287 for minority and Y12,600 for Han. It is apparent that standardising for relative income in the village – given that many villages are effectively minority villages - has a weaker effect on the minority group's satisfaction with income score than does absolute income. This reduces the coefficient on minority status in columns (3) and (4) by comparison with column (2). Thus, Table 9 provides only weak evidence that minority status in itself raises satisfaction with income. However, there are differences among the ethnic groups. When these are distinguished (using column 4 of Table 9 - equation not reported), the nationality who are most satisfied with their income are the Hui (+0.149**) and those least satisfied are the Uygur (-0.251*)

Table 10 examines the determinants of the reported minimum household annual income per capita (measured in Y,000). Our hypothesis is that having unfulfilled aspirations for income reduces happiness. Minority people, being less materialistic in their attitudes, have lower conditional aspirations for income and therefore feel less frustrated and more satisfied with life. Our test statistic is the coefficient on the dummy variable denoting minority status. The standard four columns are

presented. It is well established that the minimum income required is a positive function of actual income (Knight and Gunatilaka, 2012). The large negative coefficient in column 1 is therefore not surprising: minority people report lower unconditional minimum income. However, the test is whether they have lower minimum income relative to actual income (columns 2-4). The relationship of minimum to actual income is found to be non-linear: the income squared term is significantly negative in each case. Once the conditional variables are in place, the coefficient on minority status ceases to be significantly different from zero. Minority people appear to be no different from Han people in their degree of unfulfilled aspirations for income.

Neither Table 9 nor Table 10 provides evidence supporting hypothesis 5. This is consistent with the evidence of the happiness functions of Table 4, in which the coefficient on ln household income per capita appears to be higher, not lower, for minorities, and the importance attached to income has a more depressing effect on happiness for minorities than for the Han. These conclusions might reflect the limitations of analysing the minority group as a whole, rather than particular nationalities. We found that the Hui have the highest (conditional) happiness and the Uygur the lowest, and that the happy Hui are (conditionally) most satisfied with income and the unhappy Uygur least satisfied. Overall, however, the results suggest that the greater inherent happiness of minority people is based not so much on less concern about income but on the happiness that they derive from personal relationships.

7. Conclusion

The specific issue addressed in this paper is whether minority people in rural China, despite being poorer than Han people, are nevertheless happier – for social, cultural or attitudinal reasons. The survey shows that minority people are equally happy as Han people but that, after standardising for their much lower income, minority people are indeed inherently (that is, conditionally) happier.

Five hypotheses were formulated and tested. To our knowledge, the questions addressed have not been previously examined for rural China. The research is

necessarily exploratory, particularly as economic theory cannot throw light on this socioeconomic phenomenon. The pioneering nature of the study means that it should be helpful in identifying the key questions that require further research and the survey data that will be needed for further research.

First, our well-behaved happiness functions enabled us to identify the pure effect of minority status on happiness. The conditional effect of minority status is indeed positive. However, the lower absolute income and relative village income of minority people reduces their happiness, so that their absolute happiness is the same as that of Han people.

Second, our finding of differences in the happiness functions of the two groups suggested the need for a decomposition analysis in order to measure more accurately the pure effect of minority status on happiness. The superior resources and characteristics of Han people raised their happiness but this advantage was almost entirely offset by the greater inherent capacity of minority people to be happy, and in particular to derive happiness from family and friends.

Third, our analysis of the major ethnic groups showed important differences in their average conditional happiness scores. It seems that Mongols, Hui and Dong are conditionally happier than Han people, and Tibetans, Miao and Zhuang are about the same, whereas Uygurs are less happy. These results might reflect cultural differences or differences in the extent of perceived discrimination. Attitudes might be important. For instance, the value placed on family particularly raises the happiness of the Hui, and aspirations for income particularly lower the happiness of the Uygur.

Fourth, we were unable to find support for the notion that minority people are happier if they are concentrated together and tend to dominate the locality, for instance through the power of social networks and sense of community to raise happiness. There is no difference in happiness as between ethnic minorities that form the largest ethnic group in the (administrative) village and those that do not. Hypothesis 4 could not be confirmed by the evidence.

Fifth, we conducted two tests of the notion that the minority group is less materialistic than the Han group. However, neither test provided evidence

consistent with the hypothesis that minority people are conditionally more satisfied with their income, and by implication more satisfied with life for that reason. Rather, they appear to be inherently happier because of their greater ability to derive happiness from personal relationships with family and friends.

Our results on the non-economic determinants of happiness might reflect the net effect of two counteracting influences: lifestyle raising happiness and perceived discrimination lowering it. Differences in the relative importance of these two effects might explain the variation in conditional happiness observed across various ethnic minorities. The survey questionnaire did not permit an examination of the extent and effects of perceived ethnic discrimination, but these might be important especially in those parts of China where ethnic discontent has erupted. Further research on subjective well-being of minority people in rural China should ensure that the samples of particular nationalities are large enough to permit their reliable analysis, and that measures of, or proxies for, perceived discrimination should be gathered and their effects on happiness investigated.

The underlying issue addressed in this paper concerns the relative importance of the material and the non-material determinants of subjective wellbeing. This issue was encapsulated by Diamond (2012, epilogue), when he argued that modern societies are materially rich but socially and emotionally poor, whereas traditional societies are materially poor but socially and emotionally rich. The general conclusion of our paper is that non-material determinants of happiness – such as lifestyle, attitudes and personal relationships - can be important and deserve to be explored. This is in line with the argument in Knight and Gunatilaka (2010), which found that rural-dwellers in China are happier than urban-dwellers despite being much poorer.

With economic development often comes cultural change. It is relevant to know whether the trade-off implicit in Diamond's contrast between rich and poor societies necessarily operates in rural China. The future growth and transformation of China's economy might increasingly threaten the way of life of rural people in minority areas. It is relevant for policy making to assess the importance of preserving their life style while at the same time raising their income. The hypothesis flowing from our results – and deserving further research - is that, if subjective well-being is

accepted as a criterion for social evaluation, economic development can have detrimental cultural effects in addition to its beneficial economic effects.

We may define 'culture' as a set of attitudes, social norms and conventions, and a way of life. This paper has examined one specific economic effect of culture – its effect on subjective well-being. More broadly, however, the complex interplay between culture and economic development – with causation running in both directions and by various routes – is a topic ripe for further investigation in the coming years.

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Table 1. The dependent variables for minority and Han people: *percentage distributions and mean values*

	cardinal score	Happy(%)		Satisfied with income(%)		Minimum income required (yuan)	
		minority	Han	Minority	Han	Minority	Han
Very	4	7.48	6.76	4.09	2.68		
Yes	3	36.93	40.06	20.87	20.81		
So-so	2	39.17	35.8	33.37	37.02		
No	1	14.69	15.52	26.08	21.16		
Not at all	0	1.75	1.85	15.59	18.33		
Average value	2	2.34	2.34	1.72	1.68	10516	12217
Number of observations		2,635	1,997	2,592	1,980	2639	1994

Notes. Respondents making obvious errors and those answering 'don't know' are excluded. The calculations based on the smaller samples of Table 3 and Table 5 produce very similar percentage distributions and average values.

Table 2. Important explanatory variables for minority and Han people: percentage distributions and mean values

	Cardinal Score	Family Imp.		Friend Imp.		Income Imp.		Relative income		Income per capita(yuan per annum)	
		M	H	M	H	M	H	M	H	M	H
Very/much above	4	86.42	91.04	40.4	45.61	83.48	83.73	1.38	1.11		
Yes/above	3	12.07	6.73	41.31	34.88	14.09	12.51	14.66	13.39		
So-so/average	2	1.32	1.87	14.61	17.42	1.96	3.71	51.69	60.18		
No/below	1	0.04	0.35	3.04	1.17	0.27	0.05	29.36	22.84		
Not at all/much below	0	0.16	0	0.63	0.92	0.2	0	2.92	2.48		
Average value	2	3.85	3.88	3.8	3.8	3.8	3.8	1.82	1.88	7639	13504
Number of observations		2,577	1,976	2,532	1,958	2,555	1,967	2,606	1,979	2661	2020

Notes: respondents answering 'don't know' are excluded. The calculations based on the smaller sample of Table 4 produce very similar percentage distributions and average values.

Table 3. Happiness functions for the rural sample as a whole, including a minority status dummy; coefficents and standard errors

	(1)	(2)	(3)	(4)
Minority status	-0.0065	0.0815***	0.0461	0.0474
	(0.0261)	(0.0311)	(0.0289)	(0.0306)
Age		-0.0147*	-0.0298***	-0.0196**
		(0.0086)	(0.0080)	(0.0080)
Age squared		0.0001	0.0003***	0.0002**
		(0.0001)	(0.0001)	(0.0001)
Female gender		-0.1272***	-0.1143***	-0.1035***
		(0.0372)	(0.0348)	(0.0346)
Years of education		0.0052	-0.0036	0.0075
		(0.0056)	(0.0052)	(0.0053)
Log. income per capita		0.1815***	0.1021***	0.0927***
		(0.0181)	(0.0173)	(0.0187)
Relative to village average income:				
Much above			0.7502***	0.7159***
			(0.1313)	(0.1298)
Above			0.2985***	0.2732***
			(0.0394)	(0.0391)
Below average			-0.5729***	-0.5677***
			(0.0323)	(0.0318)
Much below average			-1.0570***	-1.0676***
			(0.0872)	(0.0861)
Province:				
Guangxi				0.1510***
				(0.0595)
Guizhou				0.2291***
				(0.0562)
Ningxia				0.3681***
				(0.0614)
Qinghai				0.5002***

				(0.0611)
	Xinjiang			0.3415***
				(0.0668)
	Inner Mongolia			0.0760
				(0.0627)
Intercept	2.3435***	1.1663***	2.3988***	1.8716***
	(0.0197)	(0.2619)	(0.2490)	(0.2537)
Adjusted R-squared	-0.0002	0.0363	0.1775	0.2042
Mean value of happiness	2.3398	2.3383	2.3430	2.3430
Number of observations	4632	3657	3589	3589

Notes. Standard errors are shown in brackets below coefficients. In this and subsequent tables *, **, and *** show significance at the ten per cent, five per cent, and one per cent level respectively. The reference categories in the dummy variable analyses are Han nationality, male gender, having average village income, and Hunan province.

Table 4. Happiness functions for minority and Han people separately: *coefficients and standard errors*

	(1)	(2)	(3)	(4)
	Excluding provinces		Including provinces	
	Minority	Han	Minority	Han
Age	-0.0306***	-0.0314**	-0.01886*	-0.0225
	(0.0097)	(0.0144)	(0.0098)	(0.0140)
Age squared	0.0002**	0.0003*	0.0002	0.0002
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Female gender	-0.1202**	-0.1121**	-0.1140	-0.1285***
	(0.0507)	(0.0487)	(0.0511)	(0.0480)
Education in years	-0.0166**	0.0188**	-0.0040	0.0307***
	(0.0067)	(0.0085)	(0.0069)	(0.0084)
Log. income per capita	0.1071***	0.0710***	0. 0591**	0.0158
	(0.0232)	(0.0268)	(0.0251)	(0.0323)
Relative to village average income:				
Much above	0.6855***	0.8005***	0. 5721***	0.7918***
	(0.1632)	(0.2104)	(0.1634)	(0.2054)
Above	0.2290***	0.3896***	0. 2263***	0.3718***
	(0.0515)	(0.0613)	(0.0511)	(0.0608)
Below	-0.5643***	-0.5744***	-0. 5729***	-0.5601***
	(0.0422)	(0.0513)	(0.0417)	(0.0500)
Much below	-1.1639***	-0.6836***	-1.1902***	-0.8080***
	(0.1152)	(0.1451)	(0.1143)	(0.1425)
Importance attached to family (score)	0.2790***	0.2394***	0.2897***	0.1995***
	(0.0469)	(0.0635)	(0.0480)	(0.0623)
Importance attached to friends (score)	0.0923***	-0.0900***	0.0952***	-0.0523**
	(0.0233)	(0.0264)	(0.0233)	(0.0266)
Importance attached to income (score)	-0.1712***	-0.0651	-0.1653***	-0.0397
	(0.0396)	(0.0498)	(0.0398)	(0.0494)
Province:				
Guangxi			0.2122***	-0.0941

			(0.0742)	(0.1165)
Guizhou			0.1797**	0.2756**
			(0.0717)	(0.1065)
Ningxia			0.4888***	0.2842***
			(0.0841)	(0.1030)
Qinghai			0.4671***	0.3917***
			(0.0829)	(0.1025)
Xinjiang			0.3004***	0.5597***
			(0.0860)	(0.1255)
Inner Mongolia			0.3917***	-0.0279
			(0.1037)	(0.1007)
Intercept	1.8509***	2.1119***	1.4983***	2.0011***
	(0.3565)	(0.4644)	(0.3705)	(0.4794)
Adjusted R-squared	0.2236	0.1694	0.2437	0.2196
Mean value of happiness	2.3492	2.3685	2.3492	2.3685
Number of observations	1847	1563	1847	1563

Note. As for Table 3 (but there is now no minority dummy).

Table 5. Decomposition analysis of the determinants of minority and Han happiness scores

Happiness	Mean Value	Std. Err
Minority	2.3492***	0.0203
Han	2.3685***	0.0225
Difference	0.0193	0.0303
Explained	0.1553***	0.0277
Unexplained	-0.1360***	0.0363
Number of observations		3410
Number of obs. Minority		1847
Number of obs. Han		1563

Note. The analysis is based on the results of Table 4 combined with the mean values of the variables obtained from the observations used in Table 4.

Table 6. Happiness functions distinguishing different minority groups: coefficients and standard errors

	(1)	(2)	(3)	(4)	(5)
Mongol	0.1759**	0.1637*	0.2045**	0.4342***	0.4349***
	(0.0793)	(0.0908)	(0.0844)	(0.0873)	(0.0831)
Hui	0.2401***	0.3286***	0.2918***	0.1663***	0.1642***
	(0.0420)	(0.0523)	(0.0495)	(0.0539)	(0.488)
Tibetan	0.0682	0.2856***	0.1963**	-0.0585	-0.0146
	(0.0619)	(0.0844)	(0.0784)	(0.0844)	(0.0772)
Uygur	-0.1139*	-0.0664	-0.2317***	-0.6923***	-0.6280***
	(0.0653)	(0.0753)	(0.0701)	(0.0925)	(0.0690)
Miao	-0.1383***	-0.0549	-0.0867**	-0.0130	-0.1041**
	(0.0412)	(0.0471)	(0.0441)	(0.0531)	(0.0434)
Zhuang	-0.1054*	-0.0146	-0.0585	0.0028	0.1968***
	(0.0563)	(0.0597)	(0.0559)	(0.0723)	(0.0550)
Dong	0.0874	0.1953***	0.1391***	0.1949***	0.0897*
	(0.0532)	(0.0572)	(0.0530)	(0.0614)	(0.0522)
Other minorities	-0.2208***	-0.1534**	-0.1133**	-0.1336**	-0.1089**
	(0.04911)	(0.0571)	(0.0529)	(0.0559)	(0.0523)
Age		-0.0090	-0.0240***	-0.0181**	-0.0168**
		(0.0086)	(0.0081)	(0.0079)	(0.0079)
Age squared		0.0000	0.0002**	0.0002**	0.0001*
		(0.0001)	(0.0001)	(0.0001)	(0.0001)
Female gender		-0.1280***	-0.1212***	-0.1168***	-0.1170***
		(0.0370)	(0.0345)	(0.0342)	(0.0340)
Years of education		0.0122**	0.0031	0.0068	0.0072
		(0.0057)	(0.0053)	(0.0052)	(0.0052)
Log. income per capita		0.1530***	0.0693***	0.0257	0.0355**
		(0.0189)	(0.0179)	(0.0198)	(0.0176)
Relative to village average income:					
Much above			0.6579***	0.7064***	0.6956** *
			(0.1305)	(0.1283)	(0.1285)

Above			0.3008***	0.3063***	0.3020***
			(0.0392)	(0.0388)	(0.0386)
Below average			-0.5786***	-0.5771***	-0.5712***
			(0.0320)	(0.0314)	(0.0315)
Much below average			-1.0692***	-1.1055***	-1.0936***
			(0.0868)	(0.0853)	(0.0854)
Province:					
Guangxi				0.1673***	
				(0.0666)	
Guizhou				0.1917***	
				(0.0571)	
Ningxia				0.3351***	
				(0.0690)	
Qinghai				0.5035***	
				(0.0675)	
Xinjiang				0.6884***	
				(0.0824)	
Inner Mongolia				0.0522	
				(0.0674)	
Intercept	2.3435***	1.2037***	2.4809***	2.4151***	2.3715***
	(0.0195)	(0.2636)	(0.2507)	(0.2565)	(0.2468)
Adjusted R-squared	0.0189	0.0541	0.1945	0.2266	0.2008
Mean value of happiness	2.3398	2.3383	2.3430	2.3430	2.1461
Number of observations	4632	3657	3589	3589	3589

Note. The specification is the same as for Table 3 except that the single minority status dummy is replaced by dummies for the main minority groups plus a residual group; Han status is the reference category.

Table 7. Happiness functions for the main minority groups: coefficients and standard errors

	(1) Hui	(2) Uygur	(3) Miao	(4) Dong
Age	-0.0470**	-0.0052	-0.0474**	0.0173
	(0.0217)	(0.0316)	(0.0189)	(0.0306)
Age squared	0.0005**	0.0000	0.0004**	-0.0002
	(0.0002)	(0.0003)	(0.0002)	(0.0003)
Female gender	-0.1136	0.2181	-0.1382	-0.0653
	(0.1050)	(0.2232)	(0.1069)	(0.1469)
Education in years	0.0111	-0.0107	-0.0131	0.0035
	(0.0152)	(0.0238)	(0.0109)	(0.0203)
Log. income per capita	0.1381**	0.0295	0. 0785	-0.0956
	(0.0549)	(0.0901)	(0.0614)	(0.1032)
Relative to village average income:				
Much above	0.6478***	0	0	1.5486***
	(0.2364)	omitted	omitted	(0.5040)
Above	0.3288***	-0.0629	0. 3428***	0.2572*
	(0.1201)	(0.1576)	(0.0932)	(0.1479)
Below	-0.4499***	-0.2633**	-0. 6061***	-0.4468***
	(0.1107)	(0.1322)	(0.0729)	(0.1056)
Much below	-0.8882***	1.9727***	-1.7560***	-1.7025**
	(0.2336)	(0.5989)	(0.2489)	(0.6872)
Importance attached to family (score)	0.7296***	0.4238***	-0.0893	0.3222**
	(0.1460)	(0.1016)	(0.1114)	(0.1532)
Importance attached to friends (score)	0.0258	0.3499***	0.1448***	0.1754**
	(0.0547)	(0.0698)	(0.0544)	(0.0706)
Importance attached to income (score)	-0.2419***	-0.8348***	-0.1512*	-0.3734***
	(0.0894)	(0.1313)	(0.0895)	(0.0967)
Intercept	0.5298	3.0838***	3.5400***	2.5798**
	(0.9074)	(1.1313)	(0.7856)	(1.3086)
Adjusted R-squared	0.2643	0.3507	0.2852	0.1992
Mean value of happiness	2.6564	2.1517	2.1707	2.4958

Number of observations	326	145	451	240

Note. The specification is the same as for Table 4 except that the single minority status group is replaced by the main minority groups.

Table 8. Happiness functions distinguishing minority households which belong to the largest ethnic group of the village and those which do not: coefficients and standard errors

	(1)	(2)	(3)
Minority household, in largest	0.0462	0.0379	0.0569
ethnic group of the village	(0.0592)	(0.0596)	(0.0597)
Age	-0.2535**	-0.0263***	-0.0204**
	(0.0101)	(0.0103)	(0.0101)
Age squared	0.0002*	0.0002**	0.0001
	(0.0001)	(0.0001)	(0.0001)
Female gender	-0.0941*	-0.1018*	-0.0758
	(0.0536)	(0.0537)	(0.0541)
Years of education	-0.0158**	-0.0166**	-0.0147**
	(0.0070)	(0.0071)	(0.0070)
Log. income per capita	0.1062***	0.1039***	0.0629**
	(0.0252)	(0.0253)	(0.0279)
Relative to village average income:			
Much above	0.8697***	0.8062***	0.8615***
	(0.2154)	(0.2238)	(0.2003)
Above	0.2401***	0.2240***	0.2493***
	(0.0547)	(0.0554)	(0.0540)
Below average	-0.5788***	-0.5842***	-0.5748***
	(0.0436)	(0.0437)	(0.0439)
Much below average	-1.4617***	-1.4846***	-1.4990***
	(0.1183)	(0.1194)	(0.1191)
Village has health station			0.1933***
			(0.0396)
Mountainous terrain			-0.0202
			(0.0477)
Village connected by road			-0.7299***
			(0.2252)
Distance (in km) to nearest middle school			0.0008
			(0.0014)

Intercept	2.3675***	2.4212***	3.2448***
	(0.3335)	(0.3359)	(0.4157)
Adjusted R-squared	0.2136	0.2125	0.2207
Mean value	2.2992	2.2931	2.3046
Number of observations	1701	1682	1694

*Note*s. Han villages and Han people are excluded throughout. Column 2 excludes people without a local hukou and those who acquired a local hukou after age 15. Column 3 adds to Column 1 four variables representing village resources or facilities. The omitted categories in the dummy variable analysis are male gender, income at village average, hilly or plain terrain, village does not have a health station, village is not connected by road.

Table 9 Satisfaction with income functions containing a minority group dummy: coefficients and standard errors

	(1)	(2)	(3)	(4)
Minority status	0.0346	0.0806**	0.0170	0.0292
	(0.0323)	(0.0387)	(0.0342)	(0.0362)
Age		-0.0022	-0.0229**	-0.0207**
		(0.0107)	(0.0095)	(0.0095)
Age squared		0.0000	0.0002**	0.0002**
		(0.0001)	(0.0001)	(0.0001)
Female gender		-0.1813***	-0.1655***	-0.1637***
		(0.0462)	(0.0408)	(0.0410)
Years of education		-0.0098	-0.0232***	-0.0167***
		(0.0069)	(0.0061)	(0.0062)
Log. income per capita		0.1334***	-0.0025	0.0417*
		(0.0225)	(0.0202)	(0.0221)
Relative to village average income:				
Much above			1.4773***	1.3933***
			(0.1531)	(0.1528)
Above			0.6295***	0.5969***
			(0.0461)	(0.0461)
Below average			-0.8501***	-0.8546***
			(0.0379)	(0.0377)
Much below average			-1.3747***	-1.3657***
			(0.1052)	(0.1048)
Province:				
Guangxi				-0.0357
				(0.0711)
Guizhou				0.0257
				(0.0672)
Ningxia				0.0456
				(0.0734)

Qinghai				0.1289*
				(0.0730)
Xinjiang				-0.3284***
				(0.0795)
Inner Mongolia				-0.1180
				(0.0750)
Intercept	1.6833***	0.6148*	2.5388***	2.0660***
	(0.0243)	(0.3260)	(0.2923)	(0.3005)
Adjusted R-squared	0.0000	0.0111	0.2463	0.2569
Mean value	1.7030	1.6791	1.6827	1.6827
Number of observations	4572	3605	3549	3549

Note: The specification is the same as for the four columns of Table 3, but the dependent variable is now the satisfaction with income score.

Table 10. Regression equations explaining the level of minimum household income per capita, containing a minority group dummy: *coefficients and standard errors*

	(1)	(2)	(3)	(4)
Minority status	-1.7005***	0.0955	-0.2567	0.3780
	(0.2810)	(0.3283)	(0.3299)	(0.3571)
Age		0.3190***	0.3052***	0.3077***
		(0.0935)	(0.0941)	(0.0945)
Age squared		-0.0038***	-0.0037***	-0.0037***
		(0.0001)	(0.0001)	(0.0001)
Female gender		0.9491**	0.9518**	0.7475*
		(0.4062)	(0.4075)	(0.4107)
Years of education		-0.0048	-0.0163	0.0073
		(0.0605)	(0.0607)	(0.0621)
Income per capita		0.1568***	0.1541***	0.1277***
		(0.0147)	(0.0148)	(0.0159)
Income per capita squared		-0.0002***	-0.0002***	-0.0002***
		(0.0000)	(0.0000)	(0.0000)
Relative to village average income:				
Much above			6.7315***	6.3716***
			(1.5347)	(1.5345)
Above			0.5541	0.5149
			(0.4616)	(0.4621)
Below average			0.5439	0.4997
			(0.3770)	(0.3754)
Much below average			1.3449	0.9171
			(1.0249)	(1.0222)
Province:				
Guangxi				-0.2318
				(0.7019)
Guizhou				-2.3166***
				(0.6598)
Ningxia				0.4011

				(0.7125)
	Qinghai			-0.5314
				(0.7167)
	Xinjiang			-0.6156
				(0.7868)
	Inner Mongolia			1.2077
				(0.7189)
Intercept	12.2168***	3.7241	3.9937*	4.0004
	(0.2121)	(2.3474)	(2.3680)	(2.4796)
Adjusted R-squared	0.0076	0.0526	0.0588	0.0701
Mean value	11.2482	11.4702	11.4478	11.4478
Number of observations	4633	3659	3586	3586

Note. The specification of the regression equation corresponds to the four columns of Table 3, but now with household minimum annual income per capita (measured in Y1,000) as the dependent variable