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RESEARCH PAPER

The Mystery of Chinese People's Happiness

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Abstract The great improvement in economic wealth and social welfare over the decade doesn't promote the Chinese people's happiness. We construct a theoretical framework which covers economic wealth, social welfare, individual functional capability to explore the impact factors and determinants of the Chinese people's happiness. Based on a national wide questionnaire survey in China, we test and modify the framework by the method of structural equation model. The empirical findings indicate that there are direct and indirect effects on the formation of happiness. For the direct effect, both the increasing of economic wealth and social welfare improves the national happiness, while the individual functional capability reduces it. For the indirect effect, the individual functional capability also reduces happiness by negatively affecting economic wealth and social welfare. The negative effect that played by individual functional capability overwhelms the positive effect played by economic wealth and social welfare. This causes the Chinese people's happiness goes down while the economic wealth and social welfare are improving. Finally, we conclude that the Chinese people's happiness is more about individual functional capability rather than social welfare or economic wealth.

Keywords Chinese people's happiness · Economic wealth · Social welfare · Individual functional capability · Structural equation model

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1 Introduction

Economic growth and social welfare improvement can increase the national subjective well-being (Diener et al. 1993; Veenhoven 1991), especially in developing countries (Easterlin 1995; Arthaudday and Near 2005). China's economy has developed in a very high speed in last decade. From 2004 to 2014, the GDP and GDP per capita have increased by 3.67 and 3.43 times respectively, and the urban and rural residents per capita net income has increased 1.43 and 1.52 times in turns. At the same time, the personnel of basic pension insurance, unemployment insurance and health insurance have also respectively increased by 1.93, 1.45 and 5.47 times.[1] These provide a necessary foundation for promoting subjective well-being of Chinese people.

However, with rapid economic growth and social welfare improvement, many negative issues have gradually emerged in recent years in China, such as the environmental pollution, employment pressure, inflation risks, and food safety problem etc. Especially the widening gap between rich and poor caused an illusion of contradictions among national people mainly by medias broadcasting and reporting the issues of house demolitions, unpaid wages and irregular death etc (Lu and Zhang 2010). The result from world values survey (WVS) data analysis showed that Chinese people's life satisfaction score decreased from 7.29 in 2004 to 6.96 in 2014, which implied a declining trend in future. These suggest that although there is significant improvement in material benefits and possessions, it doesn't promote the national subjective well-being.

This is the existing "happiness paradox" for Chinese people: on one hand, the income is rising and the benefits are improving, but on the other hand the life satisfaction is decreasing. Why Chinese people do not enjoy more happiness while they are supposed to do? What is the secret of Chinese people's subjective well-being? This paper focuses on the analysis of forming mechanism of the Chinese people's subjective well-being based on a large-scale questionnaire survey in the whole national wide in China. We try to propose a model that covers determinate factors for Chinese people's subjective well-being. The finding may help us understand the paradox of happiness of the Chinese people and then promote their subjective well-being in future.

1.1 Measurement of Subjective Well-Being

Subjective well-being is defined as a person's cognitive and affective evaluations of his or her life (Diener et al. 2001). Many researchers take it as a broad category of phenomena which includes pleasant affect (joy, contentment, affection, etc.), unpleasant affect (guilt, sadness, stress, etc.), life satisfaction (satisfaction with current life, with past, with future, etc.), domain satisfactions (work, family, finances, etc.) (Diener et al. 2001).

According to this understanding of subjective well-being, an approach to measure it is to decompose total subjective well-being into multiple items, and respondents are required to answer all the items. The overall well-being measuring result can be calculated by synthesizing all the evaluated items. Andrew and Withey (1985) measure individual well-being from the aspects of work, marriage, health, etc. The Oxford Happiness Inventory (Argyle 2001), the Memorial University of Newfoundland and Scale of Happiness in Finland (Kozma and Stone 1980) and the Short Happiness and Affect Research Protocol (Stones and Kozma 1996) assess subjective well-being from the multi-dimensional perspective including living conditions, personal goals, social values, etc. In China, Lu (1998)

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[1] This data are gathered and calculated from China's national bureau of statistics (http://www.stats.gov.cn/).

designs a Chinese Happiness Inventory consist of 48 questions which cover the goal value, the interpersonal relationship, the family and work, the future prospect etc. Subjective Well-being Scale for Chinese Brief constructed by Xing (2005) includes 10 dimensions such as the mental health, interpersonal adaptation, family atmosphere, goal achievement. Although the implementations of multiple items approach are complex and costly, it is conducive to explore the inner structural features of subjective well-being. However, the multiple items method may also result in the confusion and instability of the measurement results not only for some components of the satisfactions may be contradictory to each other (such as one may have a high satisfaction of work while a low satisfaction of family) but also for the effects are susceptible to personal emotional mood even in a very short time.

Another approach to measure subjective well-being by experimental researchers is the experimental recording method which requests the respondents to report their feeling of happiness at intervals in the laboratory (Diener 2000; Anand and Van 2006). The respondents need to carry electronic measuring devices and report the level of happiness every half an hour. The researchers will keep following up to obtain the measurement data during a few months (Amy et al. 2008). This method can overcome the current limitations of real-time and phraseology measurement. However, the cost is so high that even in developed countries such as Europe and the United States it is not widely used (Liu et al. 2012).

A more widely used method for measuring well-being is to put forward a single question such as "Taken all together, how would you say that you are very happy, pretty happy, or not too happy"? The respondents are required to answer this question in a designed Likert scale. This is a highly simplified method which can measure the individual's overall well-being very quickly and obtain a clear result. Particularly, researchers who conduct large-scale questionnaire investigation tend to adopt this method for its convenience and low cost. The World Value Survey and the Gallup Poll are using this single-one-question method. Is it reliable to measure happiness merely by such a simple question? Robinson et al. (1990) have systematically investigated the reliability problem and found that results from this measurement are stable and reliable for repeat test. Diener et al. (1999) have also discussed the comparability of such measurements. They found that the measurements are comparable both in vertical and horizontal dimensions. One can compare his (her) current happiness level not only with the past but also with others'.

In this paper, we will take advantage of the single-one-question method to measure subjective well-being both in cognitive level and affective level. First, our empirical study involves a large sample objects (more than 5000 individuals). It is impossible for us to use the experimental recording method and also is relatively costly to adopt the multiple items measurement. Second, since our research objective is to explore the influencing factors and determinants of subjective well-being, it is not suitable for us to construct a multiple measuring items which are supposed to be the components of subjective well-being. On one hand, we cannot enumerate all the ingredients of happiness, which may cause the measurement error; on the other hand, these selected measurement items may be or have a high correlation with the influencing or determination factors that we aim to figure out, which will lead to the confusion of analysis and conclusion.

1.2 Economic Wealth and Subjective Well-Being

Economic wealth is regarded as a basic element for one's subjective well-being (Morawetz 1977; Norris and Kaniasty 1992). Many researchers have studied the relationship between income and subjective well-being and found that income increase can promote individual subjective well-being. But an investigation conducted by Easterlin (1974) shows that the correlation between economic development and subjective well-being is very weak in American. The increase of economic income dose not promote the subjective well-being. This point of view is also tested and confirmed by other scholars in their studies on western and other countries such as Germany, Britain, Belgium and Japan (Blanchflower and Oswald 2004; Schyns 1998). This conclusion, however, has also been questioned. Some researchers insist that the state prosperity should be taken into consideration before the correlation analysis between personal or family income and subjective well-being. Veenhoven (1991) finds that in some poor countries the correlation is significant positive and concludes that the income growth can promote happiness. Hayo (2003) conducts an empirical study on some eastern European countries and the results support Veenhoven's opinion. Several cross-country studies show a curve effects between income and subjective well-being (Schyns 2002; Veenhoven 1996). In developed countries, the correlation between happiness and income growth is weak or even negative correlation; in developing countries especially in poor countries, happiness will ascend as income growing.

Income is the most used economic indicator to represent wealth. However, there are still some financial and market factors adopted by other researchers. Loues et al. (2016) found a small negative relationship between debt and subjective well-being ($r = -0.07$). Jeremy (2016) argued that the level of economic freedom in US states has a positive effect on both individual reported happiness and state average happiness. Some researches in China also showed that subjective well-being has a negative correlation with inflation (Chen 2013) and even a positive relation with the possessions of real estate (Lin and Zhou 2012). Although Deaton (2003) suggests that income or household expenditures are good measures of wealth, we believe that individual income or family expenditures do not equal to wealth. In this paper, we define wealth as whole individual possessions, not only including regular salary and other cash flow income, but also the value of all property. Moreover, we will study it in a dynamic perspective, i.e. to consider economic influence on present value of wealth and the future expectation appreciation of property. We believe this could be more accurate than a single income or family expenditure to measure wealth.

1.3 Social Welfare and Subjective Well-Being

Enjoying more comprehensive and perfect social welfare can help people become happier (Howell and Howell 2008). Good social welfare situation means positive expectations in future, such as extension of life expectancy, reduction of malnutrition, decreasing of infant mortality, etc.; while poverty often associates with poor health, low mobility, less education, lack of public services etc. (Klasen 1997). The rich tend to be happier than the poor mainly because they can acquire more social welfare (Diener 1995; Schyns 1998). Basically, the social welfare first must ensure the people's fundamental safety and demand. Easterlin (1995) points out that only if people are no longer worried about food, clothing, shelter and other basic security and survivability, income and assets can predict subjective well-being accurately. Similarly, high crime rates and social instability will cause people feel more unsatisfied (Di et al. 2001; Frey and Stutzer 2002). Social justice is another

important indicator to reflect the level of overall social welfare. There is a negative relationship between income inequality and subjective well-being (Graham and Felton 2006). The inequality of income reduces life satisfaction significantly (Luttmer 2005). Political participation also affects the residents' happiness (Easterlin 2009). Furthermore, Social welfare largely depends on the national government. Many scholars explore the impact of government's public expenditure on national happiness and draw a relatively consistent conclusion that government expenditure improves the national well-being, such as the spending on health care (Ram 2009), unemployment insurance (Di et al. 2001), education (Bjørnskov et al. 2010), and public safety (Wassmer et al. 2009). In addition, social and ecological environment pollution also adversely affects the public well-being (Welsch 2013). Overall, various factors related social welfare affect the public happiness, especially for China in which the current social welfare system is not good as other developed countries'. We believe that it is necessary to take various social welfare factors into consideration to explore the forming mechanism of national happiness.

1.4 Individual Features and Capabilities and Subjective Well-Being

Individual attributes are inseparable from subjective well-being which are closely inter-related to personal feelings. In this paper, we will discuss the individual attributes from perspectives of individual features and individual capabilities. The individual features refer to the external characteristics, such as gender, age, education, occupation, marriage and so on. Substantial studies indicate that subjective well-being varies from the groups with different characteristics.

Compared to the individual features, the individual capabilities are intrinsic characteristics which are more difficult to observe directly. Sen (1986) developed the capability approach (CA) addressing the good life and human flourishing. It follows the Aristotelian tradition of not restricting subjective well-being to material and focus far more on the possible scopes and freedoms of people to live their own lives (Unterhalter 2003; Walker 2005). The CA may help us understand subjective well-being from inner elements rather than from material possession. Sen indicates that personal capability and functions are more important for the judgement of life quality than welfare benefits or income increase (Sen and Nussbaum 1993). Functions are describing individuals' aspects of live, what persons are and what they wish to be, while capability represents the capable level that one acquires the functions, to be able to decide for or against the realization of certain ways of living their lives (Sen 1992, p. 39; David 2005). The basic logic of Sen's capability approach is: resources → capability → function → happiness. Sen (1985) asks predominantly about positive freedoms, thereby placing greater emphasis on the capability to act: how we can manage to have more freedom to do the things that we have good reason to value.

The capability plays a crucial role to realize the functions and then promote happiness. There are also many literatures assessing to what extent capabilities influence subjective well-being (Anand et al. 2005, 2009, 2011). In this paper we will focus on the capability, and define an individual capability resulting certain functions as a functional capability. The capability approach is an open framework and Sen did not specify a list of components of functional capability, however, the scope for function extending based on capability covers no more than individual survival and development, the relations with society and nature (Sen and Nussbaum 1993). Ingrid (2005) holds a similar view as Sen. He believes that human has unlimited ability to adapt to life and happiness is more a process rather than a goal. He also points out that closer social relations and powerful social support are more

important than material prosperity. The notions of Functional Capability tend to be more objective and accurate to express life quality and welfare level. Based on Sen's capacity approach, many Chinese scholars investigate happiness from the perspective of capability. Huang and Yao (2015) defines happiness ability as a functional system including basic physiological functions, action ability, labor skills, knowledge level, creative ability; Lu and Wang (2010) explores the happiness ability from the terms of personal characteristics, health, family life, social relationships, working condition. These Chinese researches are conducive to our understanding the connotation of functional capability and to putting forward an approximate measurement list.

For the individual features and capabilities, we will investigate subjective well-being from the functional capability aspect which may more deeply reflect the inner mechanism of the formation of subjective well-being, while takes the individual features as control or adjustment variables.

1.5 Aims

These above researches provide some theoretical basis and analytical framework for us to explore the formation mechanism of Chinese people's subjective well-being. However, the existing researches find that different factors related personal wealth and social welfare affect and determine the subjective well-being, but few of them combines Sen's functional capacity with those factors. Therefore, in this paper we will take Sen's capacity approach into consideration to analyze the formation mechanism for happiness in subjective perspective.

2 Methods

2.1 Research Framework

We establish a research framework consisting of four dimensions of factors which are economic wealth, social welfare, functional capability and individual features to probe the mystery of Chinese people's subjective well-being. Based on the exiting literatures, we can assert that economic wealth, social welfare and personal functional capability can be the crucial elements which affect or determine subjective well-being. We will focus on the impact of these three dimensions on the subjective well-being, while take the individual feature as a controlling dimension which may influence the relationships between other dimensions and subjective well-being. Obviously, there are some relations among the four dimensions, but the exact relationships between each two dimensions are unable to determine. The designed research framework is showed as Fig. 1.

2.2 Samples and Data

We have conducted a nationwide questionnaire survey in China to collect data. Samples are ordinary citizen which are drawn from 94 cities. The cities are determined by two steps. First, we draw the capital city from each of the 32 provinces in China; second, in each
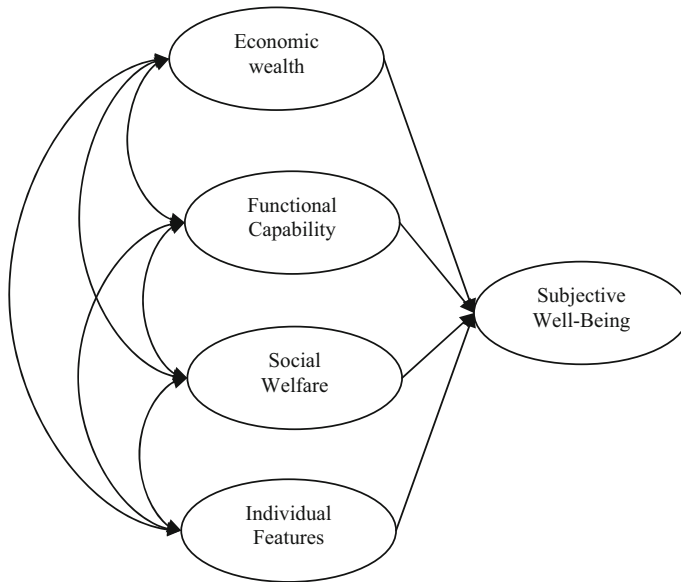
Fig. 1 Research framework

province we rank all the cities by per capita GDP in 2013, and selected two cities which are placing at the 1/4 and 3/4 position in the whole ranking list.[2]

In each city, 100 respondents are supposed to be selected to answer the question-naires. The questionnaires in each city must be issued according to a strict sample framework. Table 1 shows the sampling framework which specifies the proportion distribution of gender, age, marriage, living place and occupation. We employed 273 college students according to their hometown geographical locations and finished this large scale survey during the whole summer vacation (from July to September in 2014) while the students returned home. The students were trained to find a suitable respon-dent and distribute the questionnaires according to the sampling framework. First, they must find a person in the right occupation, which means that they should go rural area to find ten farmers and go to school to find 2–3 teachers and five students, and so on. Second, they should go further to ask the person more personal information which including the age, marriage, living place (if need) to make sure he or she is qualified to be a respondent. Finally, they give questionnaire to the respondent and recycle it after finished.

At last 8342 questionnaires have been issued and 6108 has been recycled. After further checking and examine, 5308 effective questionnaires have been reserved eventually. Table 2 shows the statistical distribution of the final 5308 samples. From the demographic distribution and statistical features, we believe that the samples are representative both in geographic and demographic.

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[2] At the beginning, we have drawn 96 cities, but 2 of them are too remote. Finally, we have finished the survey in 94 cities.

Table 1 Sampling framework in each city

Occupation	Gender		Age					Marriage		Living place		Total
	Male	Female	18–30	31–40	41–50	51–60	>61	Yes	No	Rural	Urban	
Farmer	5	5	1	3	3	2	1	8	2	10	0	10
Civil servants	5	5	3	3	2	2	0	6	4	2	8	10
Enterprise staff	15	15	8	8	6	6	2	20	10	10	20	30
Professional and technical personnel (teacher/lawyer/doctor, etc)	10	10	5	5	4	4	2	12	8	6	14	20
Self-employed	10	10	5	5	4	4	2	12	8	6	14	20
Others (students/retirees, etc)	5	5	5	0	0	2	3	5	5	2	8	10
Percent	50	50	27	24	19	20	10	63	37	36	64	100

Table 2 Demographic features

Age	18–30	31–40	41–50	51–60	61
Percent	25.6	26.3	20.7	17.2	10.2

Gender	Male	Female
Percent	49.6	50.5

Area	East	Middle	West
Percent	42.4	36.7	20.9

Marriage	Yes	No
Percent	66.9	33.2

Education	Postgraduate	University	Vocational school	Senior high school	Junior school	Primary school	Illiteracy
Percent	5.1	39.3	17.5	21.2	11.8	3.1	1.2

Living place	Urban	Rural
Percent	70.1	29.9

Family members	1	2	3	4	5	6	≥7
Percent	0.9	6.2	48.3	23.3	13.4	4.9	2.9

Occupation	Farmer	Civil servants	Enterprise staff	Professional and technical personnel (teacher/lawyer/doctor, etc)	Self-employed	Others (students/retirees, etc)
Percent	9.8	11.3	27.6	19.8	18.1	13.4

Household spending per month	0–2000	2000–4000	4000–6000	6000–8000	8000–10,000	10,000–20,000	≥200,000
Percent	18.8	41.6	22.2	9.3	3.9	3.5	0.8

2.3 Variables and Measures

Complying with the research framework showed in Fig. 1, we will select different observation variables to measure each dimension in order to obtain more accurate measurement results.

According to previous analysis, we take advantage of single-one-question method to measure subjective well-being from the integrated level, the cognitive level and affective level, which follows the definition by Lucas, Diener et al. We use one statement for each level's measurement. For the integrated level, we use a general question "taken all together, how would you say that you are very happy, pretty happy, or not too happy?"; for the cognitive level, we measure it from the satisfaction of life and the statement is "generally speaking, how do you feel satisfactory with your life?"; for the affective level, we measure it by the undergoing emotions using the statement "how are you feeling now?".

The individual features (IF) is the controlling dimension and we will control the external characteristics, such as gender, age, education, occupation, marriage and geographic areas of each respondent.

To figure out variables to measure other three factors of economic wealth, social welfare and functional capability, we first selected 40 indicators on the basis of existing literatures and designed a measure items. And then an internet test based on the original model (Fig. 1) was conducted before the nationwide questionnaire survey. After obtaining the data, the authors made a study to find the determined indicators for each aspect by principal component analysis (PCA). At last, 15 most relevant indicators have been conformed to reflect the research variables.

Therefore, there are 3 indicators to measure subjective well-being and 5 indicators represent each dimensions respectively. All the indicators are statements that require the respondent to evaluate them by the score from 1 to 10. A statistical software known as SPSS 21.0 is used to observe the descriptive statistics of the variables (Table 3).

2.4 Test Method

Due to the ability to impute relationships between unobserved constructs (latent variables) from observable variables, in this paper we choose structural equation model (SEM) to go further exploration of the formation of subjective well-being. On one hand, the SEM method allows and can process the dependent variable measured by multiple variables, which is the way we measure subjective well-being; on the other hand, it also can present a clear path analysis among these observed variables, which is the purpose of this paper to figure out the formation mechanism of subjective well-being.

3 Results

3.1 Fitting Models

The paths analysis is conducted by the software Amos 21.0. Figure 2 is the test result of the initial fitting model. However, this model is not fitted enough, then we have modified the model according to the feedback indices and related theories, and figure out the fittest model consistent with the theoretical framework which named the modified model (Fig. 3).

Table 3 Variables and descriptive statistics

Variables	Indicators	Abbr.	Min	Max	Median	SD
Economic wealth (EW)	Evaluation of income growth	IG	1	10	7.263	1.994
	Evaluation of household expenses	HE	1	9	7.008	2.279
	Evaluation of property value	PV	1	10	6.597	1.937
	Evaluation of consumption environment	CE	1	10	6.735	1.887
	Evaluation of stabilization of price	SP	1	10	6.642	1.915
Social welfare (SW)	Evaluation of public safety	PS	1	10	8.116	1.972
	Evaluation of social justice	SJ	1	9	6.951	2.094
	Evaluation of social security	SS	1	10	7.065	2.074
	Evaluation of government service	GS	1	9	7.246	2.419
	Evaluation of ecological environment	EE	1	10	6.700	1.914
Functional ability (FA)	Evaluation the ability of keeping physical health	PH	1	10	8.496	1.809
	Evaluation the ability of learning knowledge	LK	1	10	7.742	1.810
	Evaluation the ability of adapting evaluation the ability of environment	AE	1	10	7.555	2.021
	Evaluation the ability of accessing social resources	SR	1	10	7.249	1.826
	Evaluation the ability of achieving personal goals	PG	1	10	6.922	1.937
Individual features	Gender (1 represents male, 0 represents female)	GE	0	1	0.496	0.034
	Age (1, 2, 3, 4, 5 stands for the age between 18–30, 31–40, 41–50, 51–60 and above 61 respectively)	AG	1	5	2.601	2.385
	Education (1, 2, 3, 4, 5, 6, 7 stands for the education experiences of illiteracy, primary school, junior school, senior high school, vocational school, university, and postgraduate respectively)	ED	1	7	3.070	2.275
	Occupation (1, 2, 3, 4, 5, 6 stands for the different occupation of famer, civil servants, enterprise staff, professional and technical personnel, self-employed and others respectively)	OC	1	6	3.653	2.849
	Marriage (1 represents "married", 0 represents "not married")	MA	0	1	0.669	0.086
	Areas (1, 2, 3 stands for the west, middle and east area in China)	AR	1	3	2.215	0.833
Subjective well-being (SWB)	Evaluation of general happiness	GH	1	10	7.133	2.171
	Evaluation of satisfaction of life	SL	1	10	7.072	2.052
	Evaluation of undergoing emotions	UE	1	10	6. 925	1.841

3.2 Degree of Fitting

Table 4 presents the main fitting indices for the original model and the modified model. The results of original model fitting are not satisfactory. The χ^2 is 2538.367 and the p value is 0.000 less than 0.05, which means below the acceptable level of significance. Moreover, the values of Normed Fit Index (NFI), Non-normed Fit Index (NNFI), Comparative Fit
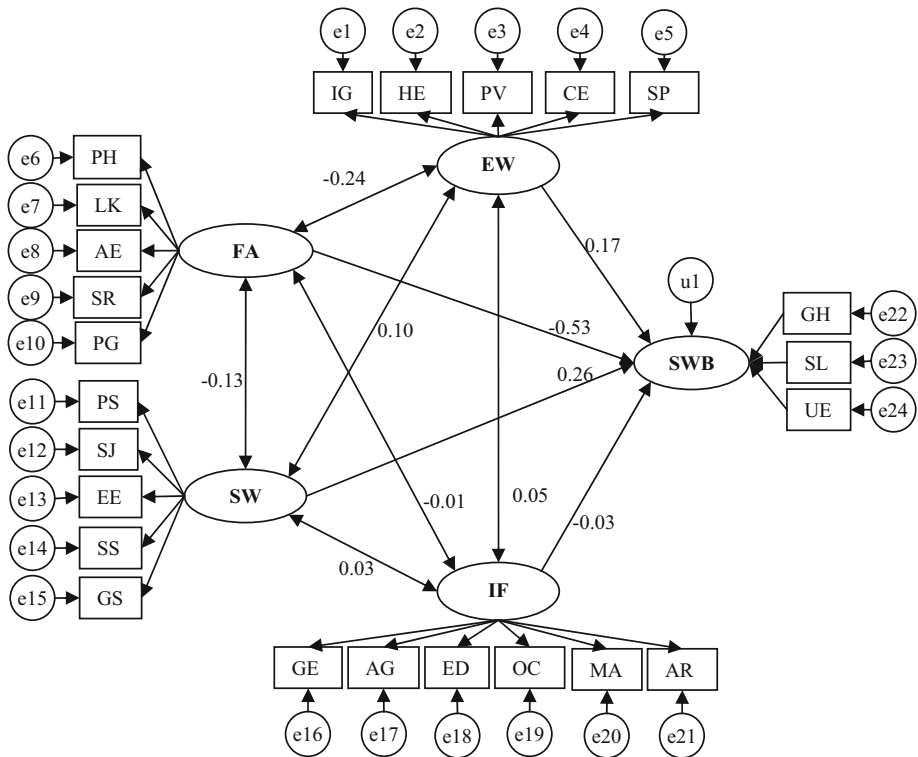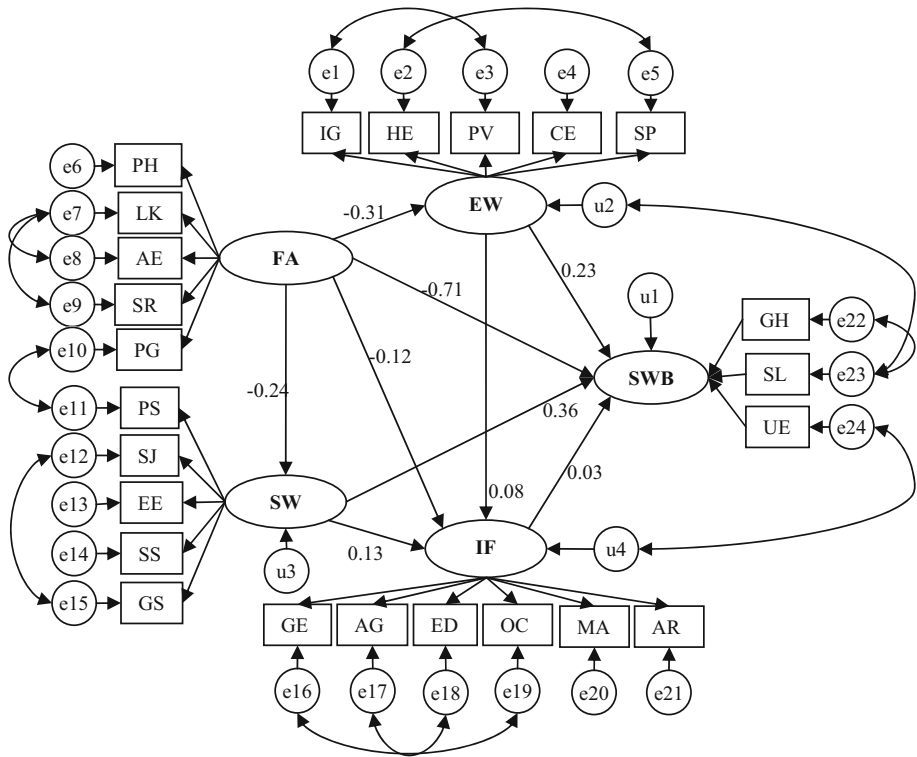
Fig. 2 Original model

Index (CFI), Goodness-of-Fit Index (GFI) and Adjusted Goodness-of-Fit Index (AGFI) are less than 0.9, while the Root Mean Square Error of Approximation (RMSEA) is more than 0.05. All the values of these indices indicate that the model is not acceptable and need further revising.

Amos 21.0 outputs not only the fitting results but also the modification indices. The most informative path modification indices are given as Table 5.

The value of Modification Indices (MI) represents the improving amount for the χ^2. Therefore, more the MI value is, more the corresponding path modification recommendation should be taken into consideration. In Table 5, there are 17 pairs of variable has a higher MI value (marked with bold), which means that making association with each pair one by one can improve the fitting indices substantially. Based on the modification suggestion from Table 5 and some related theories, we have modified the original model 4 times and figured out the final modified model (Fig. 3).

In Table 4, the fitting degree of modified model has improved significantly. First, the χ^2 goes down to 194.467, and the corresponding p value is $0.237 > 0.05$, which indicates that the model is acceptable in a 0.05 confidence level. Secondly, the values of CFI and GFI are more than 0.9 and the NFI, NNFI, and AGFI values are very closed to 0.9, which means the modified model is fitting well. Compared to the original model, the main fitting indices of the modified model all reach a better acceptable level. The modified model can be confirmed as "a good model".

Fig. 3 Modified model

Table 4 Fitting indices

Model	χ^2	RMSEA	AIC	NFI	NNFI	CFI	GFI	AGFI
Original model	2538.367 ($p = 0.000 < 0.05$)	0.673	1848.358	0.592	0.674	0.783	0.683	0.761
Modified model	194.467 ($p = 0.237 > 0.05$)	0.036	73.342	0.880	0.893	0.935	0.921	0.907

3.3 Standardized Path Coefficients

The standardized path coefficient and their corresponding significance of modified model are presented in Table 6. It is easily concluded that the structures of the dimensions of economic wealth, functional ability, social welfare, individual features and subjective well-being are valid.

For the economic wealth dimension, four variables affect the wealth significantly except the evaluation of consumption environment. The evaluation of price stabilization affects the economic wealth most, which may implicate that Chinese people are very sensitive to the life pressure resulting from rising price. As to the social welfare dimension, all the five variables are significant. The evaluation of social justice and ecological environment affect

Table 5 Informative modification indices

	MI	Par change		MI	Par change
EW → FA	**258.965**	**0.013**	e8 → e2	10.451	0.386
EW → SW	**225.896**	**−0.096**	e9 ↔ e3	9.847	−0.09
SW → FA	**279.932**	**0.246**	**e10 ↔ e11**	**121.025**	**−0.133**
FA → SW	16.876	0.354	**e12 ↔ e15**	**223.191**	**0.235**
IF → EW	**194.545**	**0.235**	e13 → e3	5.298	0.079
IF → SW	**248.749**	**0.045**	e13 ↔ e14	4.696	0.05
IF → FA	**178.857**	**0.032**	e15 → u1	7.882	−0.093
e1 ↔ e2	12.005	−0.167	**e16 ↔ e19**	**209.293**	**0.467**
e3 → e4	5.927	0.094	e16 → e20	9.886	−0.098
e2 ↔ WF	5.887	−0.091	e16 ↔ u1	8.9	−0.09
e1 → FA	5.578	0.055	e17 ↔ u1	12.134	0.102
e1 ↔ e3	**194.417**	**0.473**	**e17 ↔ e18**	**124.343**	**−0.173**
e2 ↔ e3	11.215	−0.104	e18 → e2	8.723	−0.047
e2 ↔ e5	**272.88**	**0.344**	e19 → u2	9.458	−0.057
e2 → SW	5.284	−0.101	**e22 ↔ e23**	**198.445**	**−0.087**
e4 ↔ e7	8.264	−0.063	**e23 ↔ u2**	**246.865**	**0.032**
e6 → e7	6.862	−0.102	**e24 ↔ u4**	**227.874**	**−.0087**
e6 ↔ e8	9.654	−0.102	u1 ↔ u2	12.875	0.074
e7 ↔ e8	**129.164**	**−0.05**	u2 ↔ u3	9.847	0052
e7 ↔ e9	**261.679**	**−0.125**			

the whole social welfare most (the coefficient are 0.82 and 0.76), which indicates that the national appeal to equity becomes stronger and the serious environment pollution in China causes widespread public discontent. The variables of functional ability and happiness are significant. The ability achieving personal goals affects the functional ability most, which means that it is hard for Chinese people to pursue self-value. The satisfaction of life affects the subjective well-being most.

3.4 Formation Mechanism of Subjective Well-Being

Empirical results show that the formation process of subjective well-being can be defined as direct and indirect effects (Table 7).

3.4.1 Direct Effect for Path Analysis

In Table 7, both economic wealth and social welfare have positive influence on the formation of subjective well-being, while the functional capability plays a negative role. All of them are at 1% significant level because the corresponding CR values are 11.320, 44.835 and 12.371 respectively. The standardized estimates of the three path were 0.232, 0.357 and −0.709, indicating that each increase unit of economic wealth and social welfare can improve subjective well-being at 0.232 and 0.357 unit respectively, while a unit increase of functional capability will lead subjective decrease 0.709 unit. The direct effects of path

Table 6 Standardized path coefficients of modified model

Variables	WP	SW	FA	IF	SWB
IG	0.58**	–	–	–	–
HE	0.46*	–	–	–	–
PV	0.78***	–	–	–	–
CE	0.32	–	–	–	–
SP	0.80**	–	–	–	–
PS	–	0.32*	–	–	–
SJ	–	0.82**	–	–	–
SS	–	0.45***	–	–	–
GS	–	0.57***	–	–	–
EE	–	0.76***	–	–	–
PH	–	–	0.44*	–	–
LK	–	–	0.54***	–	–
AE	–	–	0.67***	–	–
SR	–	–	0.58**	–	–
PG	–	–	0.71***	–	–
GE	–	–	–	0.57	–
AG	–	–	–	0.31*	–
ED	–	–	–	0.53	–
OC	–	–	–	0.43	–
MA	–	–	–	0.61*	–
AR	–	–	–	0.23	–
GH	–	–	–	–	0.74**
SL	–	–	–	–	0.81***
UE	–	–	–	–	0.59*
R^2	0.73	0.75	0.76	0.71	0.76

"*", "**" and "***" indicate significant at the 10, 5 and 1% level respectively

Table 7 Effects decomposition of variables

	Estimate	S.E.	C.R.	P
EW ← FA	−0.310	0.023	41.602	***
SW ← FA	−0.244	0.027	36.581	***
SWB ← FA	−0.709	0.045	12.371	***
SWB ← EW	0.232	0.043	11.320	***
SWB ← SW	0.357	0.022	44.835	***

analysis show the functional capability plays more negative role in the formation of national subjective well-being, while economic wealth and social welfare have less positive effects.

3.4.2 Indirect Effect for Path Analysis

Further analysis finds that except the existing direct effects, the functional capability also has an indirect effect on subjective well-being. In Table 7, the functional capability has significantly negative influence on the economic wealth and social welfare, and both of

them are at 1% confidence level. Specifically, one-unit increase of functional capability can result in the economic wealth and social welfare decreasing by 0.310 and 0.244 units respectively. Therefore, the functional capability can affect the formation of subjective well-being through the intermediate variables of economic wealth and social welfare.

3.4.3 Total Paths for Subjective Formation

After the direct and indirect effects for path analysis we find that the empirical results verify the validity of theoretical model (Fig. 1) and ulteriorly defined the formation paths. According to the significance tests, the formation mechanism of subjective well-being from economic wealth, social welfare and functional capability can be represented by the equation as follows:

$$\begin{cases} EW = -0.310FA \\ SW = -0.244FA \\ SWB = -0.709FA + 0.232EW + 0.357SW \end{cases} \quad (1)$$

Above all, due to the direct negative effect that functional capability plays on subjective well-being and the indirect effect that it plays on through economic wealth and social welfare, the Chinese people's subjective well-being goes down while the economic wealth and social welfare are improving. Therefore, for Chinese people, the individual functional capability plays the most important role in the formation of subjective well-being. The Chinese people's subjective well-being is more about individual functional capability rather than social welfare or economic wealth. This is the mystery of Chinese people's subjective well-being, which can interpret the existing paradox of happiness in China.

4 Discussion and Conclusion

It is believed that economic wealth increasing and social welfare improving could promote the national subjective well-being especially in developing country. With the long-term high speed of economic growth in China, the economic wealth and social welfare have improved greatly in decades, which provide a necessary foundation for the increase of subjective well-being. However, the fact is that although there is significant improvement in material benefits and possessions, it doesn't promote the Chinese spiritual well-being. This paper focused on the analysis of forming mechanism of the Chinese people's subjective well-being to figure out the reason why Chinese people do not enjoy more happiness while they are supposed to be. Based on a large-scale questionnaire survey in the whole national wide in China, this paper proposed a model that covers three crucial dimensions for forming Chinese people's happiness which are economic wealth, social welfare and functional capability. The theoretical model has been tested and confirmed by the method of structural equation model.

The individual economic wealth and social welfare positively influence Chinese people's subjective well-being significantly. This result is in accordance with the existing research finding. However, the most important result from this paper is that functional capability affects Chinese people's subjective well-being negatively more than those two which affect positively, thus it may lead the entire national subjective well-being decrease.

Why there is a negative relationship between subjective well-being and individual functional capability? First, we can discuss the direct effect from the logic of Sen's CA

theory. Sen believe that happiness is a "freedom" to live a life by one's own way and the "functions" are the measurement of the "freedom". Although the "individual functional capability" is the key elements to implement these functions, the economic and social environment can also influence the "individual functional capability". Sen believe that a good economy development can provide institutional environment to help the individuals to achieve the "functions" more easily, so as to improve the people's subjective well-being. From our study, we can find that the evaluating scores of keeping physical health, learning knowledge, adapting to environment and acquiring social resources are significantly higher than that of achieving personal goals, which indicates that Chinese people generally feel confident on their basic ability but difficult to acquire the "function" goals. The external economic and social institutional environment may lead the mismatching between "individual capability" and "functions", resulting in the decline of life freedom, thereby reducing the subjective well-being.

Furthermore, we can also interpret the indirect effect by the gap between subjective expectations and objective implementation. The general average score of individual functional capability is 7.593, which is significantly higher than that of economic wealth (6.849) and social welfare (7.216). It distinctly shows that Chinese people believe that they are capable but do not obtain the proportionate economic income and social welfare. The self-evaluation of capability can reflect the obtaining expectation of "functions", while the evaluations of economic wealth and social welfare reflect the objective reality, and the gap between those two reduce the subjective well-being. Specifically, we can find more evidences from the index evaluations of economic wealth and social welfare. For the dimension of economic wealth, the correlation coefficients between economic wealth and property value and price stability are substantial, while their evaluation scores are relatively smaller. It indicates that the Chinese people feel dissatisfaction with the economic wealth growth from property. For example, the housing price has been ascending for several years, and the income brought by the housing price rising is overwhelming the wealth produced by individual capability. The stronger individual capability is, the more unfair that the people feel, and thereby cause the reducing of subjective well-being. The same evidences can also find from the index of social welfare. The correlation coefficients between social welfare and social justice and ecological environment are substantial and their evaluation scores are relatively smaller, which means that individuals with stronger capability will more easily see the social injustice and carp at the ecological environment which will lead the happy feeling goes down.

5 Strengths and Limitations

Many existing researches have explored the relations between subjective well-being and the economic wealth and social welfare. According to Sen's CA theory, however, we have added the individual functional capability into the existing framework and investigated the formation of subjective well-being from all the three dimensions, individual functional capability, economic wealth and social welfare. We have not only constructed a conceptual framework consisting of these three dimensions to analyze the formation of happiness, but also tested the conceptual framework by a large scaled survey data and found that the mismatching between "individual capability" and "functions" is the reason why Chinese people are not happy as they supposed to be. This paper has provided an interpretation for the paradox of happiness in China from the perspective of capability.

The key limitation of current study is the cross sectional data only by which time effects on the formation of subjective well-being cannot be observed. Therefore, our findings should be tested by time series data in further research. Another limitation lies on the controlling of individual features. Although the individual characteristics such as gender, age, occupation, education and marriage have been controlled, the individual personality traits have not been included. Plenty of studies show that the individual personality traits may also affect the subjective well-being significantly.

References

Amy, L. C., Natalia, S., & Ellen, W. (2008). Flow and happiness in later life: An investigation into the role of daily and weekly flow experiences. *Journal of Happiness Studies, 10*(6), 703–719.

Anand, P., Hunter, G., Carter, I., Dowding, K., Guala, F., & Van Hees, M. (2009). The development of capability indicators. *Journal of Human Development and Capabilities, 10*(1), 125–152.

Anand, P., Hunter, G., & Smith, R. (2005). Capabilities and well-being: Evidence based on the Sen–Nussbaum approach to welfare. *Social Indicators Research, 74,* 9–55.

Anand, P., Krishnakumar, J., & Tran, N. B. (2011). Measuring welfare: Latent variable models for happiness and capabilities in the presence of unobservable heterogeneity. *Journal of Public Economics, 95*(3–4), 205–215.

Anand, P., & Van, H. M. (2006). Capabilities and achievements: An empirical study. *Journal of Socio-Economics, 35,* 268–284.

Andrew, F. M., & Withey, S. B. (1985). Modeling the psychological determinants o life quality. *Social Indicators Research, 16*(1), 1–34.

Argyle, M. (2001). *The psychology of happiness*. New York: Taylor and Francis.

Arthaudday, M. L., & Near, J. P. (2005). The wealth of nations and the happiness of nations: Why "accounting" matters. *Social Indicators Research, 74*(3), 511–548.

Bjørnskov, C., Drehe, A., & Fischer, J. A. V. (2010). Formal institutions and subjective well-being: Revisiting the cross-country evidence. *European Journal of Political Economy, 26*(4), 419–430.

Blanchflower, D. G., & Oswald, A. J. (2004). Well-being over time in Britain and the USA. *Journal of Public Economics, 88*(7–8), 1359–1386.

Chen, G. (2013). Social welfare costs of inflation: An empirical study on the residents' subjective well-being. *Journal of Finacial Research, 2,* 60–73.

David, A. C. (2005). Sen's capability approach and the many spaces of human well-being. *The Journal of Development Studies, 41*(8), 1339–1368.

Deaton, A. S. (2003). Household surveys, consumption, and the measurement of poverty. *Economics Systems Research, 15*(2), 135–159.

Di, T., Mac, C., & Osw, A. (2001). Preferences over inflation and unemployment. *The American Eco nomic Review, 91*(1), 335–341.

Diener, E. (1995). Factors predicting the subjective well-being of nations. *Journal of Personality and Social Psychology, 69*(38), 851–864.

Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist, 55*(1), 34–43.

Diener, E., Lucas, R. E., & Oishi, S. (2001). Subjective well-being: The science of happiness and life satisfaction. In C. R. Snyder & S. J. Lopes (Eds.), *Handbook of positive psychology*. Oxford: Oxford University Press.

Diener, E., Sandvik, E., & Seiklitz, L. (1993). The relationship between income and subjective well-being: Relative or absolute. *Social Indicators Research, 28*(3), 195–223.

Diener, E., Suh, E. M., Lucars, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin, 125*(2), 276–302.

Easterlin, R. A. (1974). Does economic growth improve the human lot? Some empirical evidence. In P. A. David & M. W. Reder (Eds.), *Nations and households in economic growth: Essays in honour of Moses Abramowitz*. New York: Academic.

Easterlin, R. A. (1995). Will raising the incomes of all increase the happiness of all. *Journal of Economic Behavior and Organization, 27*(1), 35–47.

Easterlin, R. A. (2009). Lost in transition: Life satisfaction on the road to capitalism. *Journal of Economic Behavior and Organization, 71*(2), 130–145.

Frey, B. S., & Stutzer, A. (2002). What can economists learn from happiness research? *Journal of Economic Literature, 40*(1), 402–435.

Graham, C., & Felton, A. (2006). Inequality and happiness: Insights from Latin America. *Journal of Economic Inequality, 4*(1), 107–122.

Hayo, B. (2003). Happiness in eastern Europe. *Paper presented at 5th conference ISQOLS*. Frankfurt.

Howell, R. T., & Howell, C. J. (2008). The relation of economic status to subjective well-being in developing countries: A metaanalysis. *Psychological Bulletin, 134*(4), 536–560.

Huang, Y. D., & Yao, X. G. (2015). Complete capability, function expanding, and basic happiness capabilities equal: An extended research on Sen's capability approach theory. *Comparative Economic and Social Systems, 178*(2), 97–105.

Ingrid, R. S. (2005). The capability approach: A theoretical survey. *Journal of Human Development, 6*(1), 93–114.

Jeremy, J. (2016). Free to be happy: Economic freedom and happiness in US States. *Journal of Happiness Studies*. doi:10.1007/s10902-016-9770-9.

Klasen, S. (1997). Poverty, inequality and deprivation in South Africa: An analysis of the 1993 Saldru survey. *Social Indicators Research, 41*(1), 51–94.

Kozma, A., & Stone, M. J. (1980). The measurement of happiness: Development of the memorial university of newfoundland scale of happiness. *Journal of Gerontology, 35*(1), 906–912.

Lin, J., & Zhou, S. J. (2012). Prices of urban real estate, housing property and subjective well-being. *Finance and Trade Economics, 5,* 112–120.

Liu, J. Q., Xiong, M. L., & Su, Y. (2012). National sense of happiness in the economic growth period: A study based on CGSS data. *Social Science in China, 12,* 82–102.

Loues, T., Cassondra, B., Scott, P., & Kl, Lauren. (2016). Debt and subjective well-being: The other side of the income-happiness coin. *Journal of Happiness Studies*. doi:10.1007/s10902-016-9758-5.

Lu, L. (1998). The meaning, measure, and correlates of happiness among Chinese people. *Humanities and Social Sciences, 8*(1), 115–137.

Lu, Y. P., & Wang, T. (2010). Research to the influential factors of subjective well-being. *Journal of Economics Dynamic, 46*(5), 125–130.

Lu, Y. P., & Zhang, K. Z. (2010). Economic growth, pro-poor spending and national happiness: Empirical study based on China's well-being data. *Economist, 23*(11), 5–14.

Luttmer, E. F. (2005). Neighbors as negatives: Relative earnings and well-being. *The Quarterly Journal of Economics, 20*(3), 963–1002.

Morawetz, D. (1977). Income distribution and self-rated happiness: Some empirical evidence. *Economic Journal, 87*(347), 511–522.

Norris, F. H., & Kaniasty, K. (1992). A longitudinal study of the effects of various crime prevention strategies on criminal victimization, fear of crime, and psychological distress. *American Journal of Community Psychology, 20*(5), 625–648.

Ram, R. (2009). Government spending and happiness of the population: Additional evidence from large cross-country samples. *Public Choice, 138*(3), 483–490.

Robinson, J. P., Shaver, P. R., & Wrightsman, L. S. (Eds.). (1990). *Measures of personality and social psychological attitudes*. San Diego: Academic Press.

Schyns, P. (1998). Cross-national differences in happiness: Economic and cultural factors explored. *Social Indicators Research, 43*(1), 3–26.

Schyns, P. (2002). Wealth of nations, individual income and life satisfaction in 42 countries: A multilevel approach. *Social Indicators Research, 60*(1), 5–40.

Sen, A. (1986). Chapter 22 social choice theory. *Handbook of Mathematical Economics (Elsevier Science Direct), 3,* 1073–1181.

Sen, A. K. (1985). Well-being, agency and freedom: The Dewey lectures 1984. *The Journal of Philosophy, 82*(4),169–221.

Sen, A. K. (1992). *Inequality reexamined*. Oxford: Clarendon Press.

Sen, A., & Nussbaum, M. (1993). *The quality of life*. Oxford, New York: Clarendon Press, Oxford University Press.

Stones, M. J., & Kozma, A. J. (1996). Gold short happiness and affect research protocol. *Social Indicators Research, 37*(2), 75–91.

Unterhalter, E. (2003). Education, capabilities and social justice. Paper commissioned for the EFA global monitoring report 2003/4. The Leap to Equality. Retrieved April 4, 2012 from: http://www.unesdoc. unesco.org/images/0014/001469/146971e.pdf.

Veenhoven, R. (1991). Is happiness relative? *Social Indicators Research, 24*(1), 1–34.

Veenhoven, R. (1996). Development in satisfaction research. *Social Indicators Research, 37*(2), 1–46.

Walker, M. (2005). Amartya Sen's capability approach and education. *Educational Action Research, 13*(1), 103–110.

Wassmer, R., Lascher, E., & Kroll, S. (2009). Sub-national fiscal activity as a determinant of individual happiness: Ideology matters. *Journal of Happiness Studies, 10*(5), 563–582.

Welsch, H. (2013). Environment and happiness: New evidence for Spain. *Social Indicators Research, 112*(3), 549–567.

Xing, Z. J. (2005). The preparation of Chinese urban residents subjective well-being scale. *Journal of Hong Kong Council of Social Science, 23*(3), 151–189.