

Chapter 6

Life Satisfaction and Underlying Factors



Di Zhu

GDP was once the most important indicator for measuring societal development and ensuring human welfare. Most people aspire towards a better life—“money equals happiness” still applies to most situations. Yet, there is evidence that happiness and life satisfaction does not necessarily correspond to material wealth. From 1990 to 2010, even as per capita GDP in China grew at rates exceeding 8%, reported life satisfaction showed a U-shaped trend. By comparing data collected by the World Values Survey, the Asian Barometer Survey, Gallup Inc., the Horizon Research Consultancy, and the Pew Research Center over different periods in time, Easterlin et al. discovered that levels of life satisfaction among Chinese residents began to decline from 1990 onwards. It was not until 2000–2005 that this trend began to reverse. In the face of such contradictions, the international community and academic community gradually came to focus not just on objective material conditions but also subjective assessments of life. This led to broad debate: What significance do economic factors hold in relation to subjective well-being? Does the influence of economic factors vary at the micro and macro levels? Several scholars have also included social equity, social security, social support, eco-environmental factors, health, and marriage in studies on the non-economic factors that influence levels of life satisfaction.

Although there has been a large body of research on life satisfaction and subjective wellbeing, sociologists have yet to make substantial contributions to this field. The influence of social justice and public services, subjects that have been more widely discussed in sociology, on life satisfaction have been emphasized to a lesser degree. Existing research is more concerned with the measurement of life satisfaction, emphasizing the function of uni-dimensional factors such as economic conditions and the environment from an academic perspective. As such, there is lack of comprehensive, systematic observations on the factors underlying life satisfaction. The research undertaken in this chapter was motivated by a desire to rethink the effects

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of socio-economic policies and propose policy suggestions. Hence, we propose an analytical framework comprising the factors of economy, society, the environment and individual quality of life, in the hope of providing a response towards relevant policies and institutions. I will also emphasize the role of a social safety net, social justice, and environmental factors in influencing life satisfaction from a sociological perspective. Based on this analytical framework, the present chapter uses data from the 2013 Chinese General Social Survey to build a model to explain life satisfaction, describe the degree of influence of relevant factors and test our analytical framework.

The present chapter first delineates the concept and research significance of life satisfaction before establishing the analytical framework on the basis of existing research. The section on empirical analysis will introduce the sources of our data before analyzing the life satisfaction of urban residents in China and comparing it with other countries and other periods in history. The central part of the section builds our explanatory model for the life satisfaction and discusses research discoveries. The chapter will end by summing up empirical findings and discussing the lessons that they bear for academic research and policy making.

6.1 The Concept and Significance of Life Satisfaction

Unlike objective indicators such as income, education, and health, life satisfaction is a subjective measure of welfare and quality of life, as assessed by people's feelings and experiences. Apart from life satisfaction, other related terms used by scholars writing in English include "subjective wellbeing" and "happiness". "Subjective wellbeing" is an umbrella term for the different valuations people make regarding their lives, the events happening to them, their bodies and minds, and the circumstances in which they live.

Diener et al. breaks subjective wellbeing into three main components:

1. Life satisfaction, which includes how a respondent evaluates or appraises his or her life taken as a whole, along with individual evaluations of their income, housing, and leisure circumstances.
2. Affect, including positive affect such as joy and satisfaction, and negative affect such as dismay or anger.
3. Domain satisfaction, including sense of achievement and meaning.

"Happiness" is not as well-defined, where there are at least two distinct meanings to this term in an academic context. The first is as a measure of emotional state, for instance: "Were you happy yesterday?" Such emotional experiences are generally short-lived and fluid, and highly influenced by recent events. The second is as a measure of both emotional state and evaluation of life, for instance "On the whole, would you say you lead a happy life?" In this sense, "happiness" is highly similar

to “subjective wellbeing”. In the World Happiness Report, which consolidates independent reports by researchers from Canada, the UK and the US, the “happiness” of people from various countries are discussed under this framework.

Thus, at a conceptual level, life satisfaction is a major component of subjective well-being. Compared to positive/negative affect and domain satisfaction, which evaluate the emotional or spiritual aspects of life, self-reported levels of life satisfaction which stem from a respondent’s assessment of his or her life in terms of employment, income, marriage, housing, and health can more directly reflect socio-economic progress and the effect of social policies. Thus, of the many dimensions inherent in subjective wellbeing, life satisfaction is the one that directly responds to policy measures. This quality is what makes life satisfaction significant to institutional and policy reforms.

Therefore, some policy reports also use life satisfaction as the main means for determining levels of subjective wellbeing, including the OECD *How’s Life?* report. Of course, respondents may not be able to accurately distinguish the difference between life satisfaction and emotional experience during actual surveys. Answers to questions on life satisfaction are often mixed with respondents’ emotions and their assessment of various aspects of life. Care must be taken to account for this when interpreting empirical data. At the conceptual level, our chapter makes a distinction between these aspects. Subjective wellbeing is assessed mainly through life satisfaction. Relevant analytical frameworks and empirical concepts will be discussed in later sections.

Indicators that measure life satisfaction have drawn greater attention in recent years, and are now widely used in research on policy and public opinion. Existing studies have pointed out that life satisfaction is a highly sensitive measure of welfare. Despite having a mechanism of action different from GDP indicators, life satisfaction is also an effective measurement tool. As explained by Easterin et al., the GDP indicator represents how material living standards have improved on average, while a life satisfaction index reveals changes in the living standards enjoyed by average citizens, particularly those with lower incomes or levels of educational attainment.

People’s material desires have grown along with general living standards, leading to greater concerns regarding issues such as (un)employment, health insurance, children’s expenses, and old-age care. As a result, life satisfaction does not increase linearly with rapid economic growth. In this sense, compared with GDP, which is a somewhat simplistic indicator, life satisfaction is more meaningful indicator that comprehensively reflects circumstances of life and wellbeing.

Life satisfaction has also been incorporated in official UK policy. The Green Book published by the UK Treasury (the Exchequer) is an official guide on appraising and evaluating policies. The Green Book makes particular note of how measuring life satisfaction can contribute to Social Cost Benefit Analysis: “At the moment, subjective well-being measurement remains an evolving methodology and existing valuations are not sufficiently accepted as robust enough for direct use in Social Cost-benefit Analysis. The technique is under development, however, and may soon be developed to the point where it can provide a reliable and accepted complement to the market-based approaches outlined above. In the meantime, the technique will

be important in ensuring that the full range of impacts of proposed policies are considered, and may provide added information about the relative value of non-market goods compared with each other, if not yet with market goods.”

In general, research on life satisfaction includes the three main aspects described below. These aspects are also the main justification for our focus on life satisfaction.

First, life satisfaction is an effective tool for evaluating socio-economic progress and policy systems. Life satisfaction is founded upon subjective experience. As such, it can measure the subjective impact of socio-economic changes on people’s lives, thus providing a basis for appraising social progress and the effect of social policies. Despite sustained economic growth, people’s feelings about the various aspects of their lives may very well head in the opposite direction. Therefore, effective institutions and policies should not only ensure that citizens are able to meet their material needs, but also seek to enhance their life satisfaction.

Second, research on life satisfaction makes it more feasible to design cross-cultural and transnational socio-economic policies. It is near impossible to design such policies simply by controlling for objective variables, while life satisfaction is quite sensitive to many economic, social, political, and environmental indicators, allowing it to provide information on a wider range of policy consequences than objective indicators. For instance, what are the advantages and disadvantages of the same policy in different national and cultural contexts? Of course, there still certain conditions that limit the effectiveness of such comparison.

Third, an analysis of the factors underlying life satisfaction is a robust empirical tool for testing socio-economic outcomes. Such analysis can reveal which factors play a stronger role in enhancing subjective wellbeing, thus allowing us to verify whether outcomes generally regarded as signs of socio-economic progress truly meet people’s life expectations and enhance their quality of life. Given that life satisfaction is an important part of overall social welfare, such analysis provides robust empirical evidence for testing the effects of social policies.

However, it should be emphasized that, despite being an important tool for assessing the quality of life, life satisfaction cannot replace objective indicators such as GDP, income, and employment. Some people may be happy despite being poor, but their subjective emotional experience does not translate to a higher quality of life. Neither can governments evade their duties to eliminate poverty and improve livelihoods. Thus, relevant reports and studies on life satisfaction have emphasized that subjective wellbeing is a complement to objective indicators. Much as objective socio-economic indicators do not represent social welfare, subjective wellbeing does not in itself represent quality of life.

6.2 An Analytical Framework for Life Satisfaction

There has been much research on life satisfaction and subjective wellbeing, both inside and outside of China, mostly in the fields of economics or psychology. Most existing research can be divided into two categories. Psychologists, and some sociologists, focus on the measurement and comparison of life satisfaction. Significant research in this respect include Diener et al., Xing (2008), Zhou and Ren (2006), Feng and Yi (2000). Other studies focus on the factors underlying life satisfaction. For instance, such research may focus on “whether money equals happiness”, i.e. the effect of income or GDP on life satisfaction. In this regard, Easterlin made an observation that would come to be known as the Easterlin paradox, where he found that greater household income is correlated with greater life satisfaction, but average levels of life satisfaction for a country do not appear to increase over time in line with increases in average national income. There is still debate among scholars regarding how income levels affect life satisfaction, which we will address in greater detail later.

There are also studies that focus on environmental, psychological, or employment factors (Cao 2011). Yet other studies have focused on the composite effect of multiple factors. For example, Fang and Feng (2009) analyze subjective wellbeing from the perspectives of employment, income, housing, health, and interpersonal relationships. Liu et al. (2012) introduced annual income, subjective ratings of social status, changes in social status, political identity and other such demographic variables in their analysis of the factors underlying levels of happiness. The urban life satisfaction model constructed by Appleton and Song included income, health, health insurance, political participation as explanatory variables along with related control variables.

Existing studies have measured life satisfaction, happiness, and subjective quality of life, and their relationship with income in great detail. However, comprehensive analysis of the factors underlying life satisfaction has been lacking. Alternatively, we can say that such research has paid less attention to the development of frameworks for analyzing such factors. Why are certain underlying factors selected? What are the relevant underlying theoretical assumptions and theoretical concerns? What are the internal structures of these factors and how are they connected? Only by elucidating these issues can we ensure the reliability and validity of an explanatory model.

More countries and social organizations now realize that improvements to citizens’ quality of life and wellbeing require due consideration of economic, social and environmental factors. This has weaned them of their sole reliance on GDP as an indicator in measuring social progress. More comprehensive indicators are now employed, the more well-known of which include the Human Development Index,¹ which emphasizes health and education, the Happy Planet Index,² which emphasizes sustainable, eco-friendly development, and the Better Life Index,

¹ United Nations Development Programme, <http://hdr.undp.org/en/humandev>.

² The New Economics Foundation, <http://www.happyplanetindex.org>.

which comprehensively evaluates material wealth, quality of life, and sustainable development.

There is much existing research on the relationship between life satisfaction and such factors as income, social security, social equity, quality of public services, the environmental quality, and individual quality of life, which provide an approach to designing our analytical framework.

6.2.1 Life Satisfaction and Economic Factors

With respect to economic factors, existing research has mainly focused on the effect of income on life satisfaction. In addition, by making a distinction between absolute and relative perspectives, researchers have emphasized that there are different mechanisms by which life satisfaction is influenced by income. Based on a demand-satisfaction framework, Veenhoven postulated that happiness is preconditioned upon the satisfaction of innate basic needs. Because those with higher incomes are able to satisfy their basic needs, their levels of income and happiness are positively correlated, and their happiness is not “relative”, i.e. not derived from comparison with others. Of course, Veenhoven also pointed out that human needs do not increase indefinitely, meaning that the relationship between income and happiness obeys the law of diminishing marginal returns. Past a certain threshold, the marginal utility of income diminishes to zero.

Unlike Veenhoven, Easterlin argues that happiness is relative. In other words, satisfaction is “relative”, derived from comparison with one’s previous status or from comparison with others. Thus, Easterlin believed that income levels do not induce a change in life satisfaction. Rather, it is material desire, as an intermediary variable, that affects life satisfaction: an increase in income brings about greater material desires, while greater material desires offset any positive effect by income growth on life satisfaction. The “relative” view is also held by Diener and Biswas-Diener, whose review of relevant literature found that: (1) income growth raises life satisfaction only for those in extreme poverty, not for those of the middle or upper-middle class, or residents of rich countries; (2) material desires and the drive to accumulate greater wealth are factors that thwart any increase in life satisfaction.

Chinese scholars have derived relevant empirical evidence from domestic data that shed further light on these debated issues. Xing (2011) noted the relationship between absolute income and happiness. By analyzing data from surveys carried out in six Chinese provincial capitals, Xing found that income had only a slight effect on happiness for urban residents, while there was a stronger correlation between income and happiness in less affluent regions. Xing also found that people with higher incomes were generally less happy than those with lower incomes. Luo (2009) defined absolute income as total household income per capita, while relative income was defined with reference to the subjective poverty line, average income in the locality, and previous income levels. After analyzing data from randomized surveys of urban and rural residents across China, Luo found that relative income has a

significant impact on subjective wellbeing. In addition, even after controlling for relative income, absolute income also had a significant impact on the same.

Guan (2010) used mathematical techniques to treat absolute income as income for the past year and relative income as individual assessments of one's income level in an analysis of survey data from Beijing, Shanghai, and Guangdong. Guan's results show that relative income, but not absolute income, had a significant impact on happiness. Guan also used regional characteristics, educational attainment, age factors, and the population quantile method to construct four different indicators to measure relative income and build corresponding regression models, all of which verified that relative income indeed had a significant impact on happiness.

Using a comparative framework, Liu et al. (2012) included relative social status (relative to other persons) and improvements in social status (compared to past status) as explanatory variables for levels of happiness. Their model showed that relative social status, both in comparison with others and one's past status, had a significant impact on happiness, suggesting that "the pursuit and achievement of a higher relative status is an important factor underlying levels of happiness".

6.2.2 Life Satisfaction and Social Factors

Existing studies mainly discuss the impact of social factors on life satisfaction from the perspectives of social security, social governance, social equity, public services and social support. Diener and Suh argued that, in addition to economic indicators, social indicators and subjective wellbeing should be included in measures of "the good life", i.e. wellbeing and quality of life. Such social indicators include health indicators (infant mortality rates, number of doctors, life expectancy), public safety and security (suicide rates, size of the police force, rate of sexual violence), as well as indicators related to the environment, human rights, social welfare, and education. These social indicators also have a large impact on subjective wellbeing.

Diener and Sellman emphasize the role of non-economic indicators in measuring national wellbeing, including social governance (freedom, democracy, political stability), social capital (trust, civic engagement), and religious beliefs. Dolan et al. pointed out that income inequality has a negative impact on life satisfaction, but this effect differs across different countries and groups. For instance, Latin Americans are happy despite greater income inequality, while people from the former Soviet bloc are less so despite more equitable income distributions. Needless to say, whether or not income inequality adversely impacts life satisfaction depends on people's views: does income inequality benefit economic efficiency, or does it lead to unequal opportunities? Researchers have also found that social mobility is lower in Europe, meaning that income inequality leads to unequal opportunities, which needless to say has a negative impact on life satisfaction.

When analyzing macro data, scholars generally tend towards using objective indicators such as the Gini coefficient to measure the impact of social (in)equity on life

satisfaction. When using micro data, however, it is more common to measure such impact on life satisfaction through attitudes towards social (in)equity. For instance, Shi and Cui (2006) used data from nationwide surveys to explore the relationship between social equity and life satisfaction. Their study defined citizens' views of social equity from two aspects: (1) attitudes towards just outcomes, procedural fairness, and social regulation; (2) appraisals of one's current social standing. Attitudes towards just outcomes refer to attitudes pertaining to modes of income distribution and economic inequality, attitudes towards procedural fairness refer to attitudes pertaining to fairness of opportunity and the market economy, while attitudes towards social regulation reflects whether one's values are "individualistic" or "group-oriented".³ Their research concluded that life satisfaction was significantly influenced by procedural fairness and appraisals of one's social standing, but not just outcomes.

Few studies have explored the impact of social security on life satisfaction. Di Tella et al. used pension replacement rates to approximate the level of social security. By analyzing data on individual pensioners in Europe, they found that a higher pension replacement rate enhanced life satisfaction for both the employed and unemployed. Appleton and Song analyzed data from surveys conducted in urban Chinese regions and found that health insurance had a significant impact on life satisfaction. Those with coverage for major health conditions (part of the premiums is borne by the individual) and those without any form of health insurance had lower levels of life satisfaction than those who were entitled to health insurance provided by the state.

6.2.3 Life Satisfaction and Environmental Factors

In related research, there are usually two types of methods for measuring environmental factors. The first type uses objective indicators such as levels of nitrogen dioxide and suspended particulate matter, while the second type uses subjective indicators such as environmental awareness and environmental satisfaction. Most empirical research suggest that levels of environmental pollution and environmental concerns are significantly correlated to life satisfaction. This emphasizes the role of sustainable development and consumption in enhancing life satisfaction.

Makeron and Mourato collected data on air quality in 400 London homes, and asked their inhabitants to indicate whether they felt air pollution was a serious issue in their neighborhood. In so doing, they discovered that both objective measurements and subjective appraisals of air pollution levels had a significant adverse impact on life satisfaction. This was true even after controlling for other related variables. Smyth et al. focused on the relationship between air pollution and subjective wellbeing in Chinese cities. Their study assessed environmental quality through levels of sulfur dioxide emissions, rates of environmental incidents, traffic congestion levels, and

³ In other words, whether one values the group over oneself or vice versa. –Trans.

availability of green spaces, while controlling for socio-economic variables and political views, such as income inequality, opinions on the merits of the market economy, social protections, as well as respondents' personal traits. They found that severe air pollution, greater rates of environmental incidents, and severe traffic congestion significantly lowers subjective wellbeing. Approval of the market economy system and a belief that society is unequal also results in lower subjective wellbeing. In a study that involved 18 cities, Cao (2011) used nitrogen dioxide concentration levels to measure air quality and found that there is a significant correlation between air quality and life satisfaction among low-income groups. The same was not true for those with higher incomes.

Environmental consciousness is also included in subjective indicators. After a panel survey of British households that controlled for environmental conditions, residential localities, lifestyles, and psychological characteristics, Ferrer-I-Carbonella and Gowdyb found that concern about ozone pollution levels was negatively correlated with life satisfaction. They also found that life satisfaction was more affected by the degree of concern for the environment than objective levels of environmental pollution. In addition, concern about biodiversity was also positively correlated with levels of life satisfaction. The authors interpreted this to mean that concern for the surrounding environment brought about positive psychological affect.

Since the environment has a major impact on human wellbeing and life satisfaction, both researchers and the international community advocate a balance between "environmental consumption" (development and utilization of environmental resources) and human wellbeing. The pursuit of human wellbeing may well be the fundamental goal of social development, but lower environmental impacts and more efficient utilization of environmental resources is key to sustained improvement of human wellbeing. This idea has become known as the "environmental efficiency of wellbeing (EWEB).

Knight and Rosa used variables that affected life satisfaction in a regression model to measure EWEB. Using data from 105 countries, they examined how EWEB was related to economic development, democracy, inequality, levels of trust, and climate factors.

Interestingly, economic development was related to EWEB by a negative quadratic function, implying that EWEB increases when the level of economic development is low, but declines when an economy becomes more developed. In turn, this implies that life satisfaction improves only through greater environmental consumption. This refutes the theory that only economic growth can sustain greater human wellbeing. In addition, social inequality is negatively correlated with EWEB while levels of trust are positively correlated. This "sustainable wellbeing" framework, which accounts for environmental impact, bears important lessons for our analytical framework and relevant policy proposals.

Jacob et al. explored the impact of ecologically sustainable behavior on subjective wellbeing from the perspective of sustainability. In particular, they examined the impact of sustainable food consumption, one of the indicators of ecologically sustainable behavior. Sustainable food consumption generally refers purchasing locally grown or organic food, dining in restaurants operated by local residents, and cooking

at home. Their empirical analysis showed that sustainable food consumption had a significantly positive impact on subjective wellbeing. The authors interpreted this to mean that reflection and self-discipline leads people to put greater store upon inner experiences and processes, which then leads to greater satisfaction and happiness.

6.2.4 *Life Satisfaction and Individual Quality of Life*

When measuring life satisfaction, existing research also emphasizes the impact of health, time and unemployment on an individual's quality of life. Among the three, health and unemployment have been found to have a greater impact. For example, in an analysis of papers published in economics journals since 1990, Dolan et al. found that despite a lack of consensus, or even disagreement, among researchers on the factors underlying subjective wellbeing, scholars generally agree that health and unemployment are significant factors. This has been supported by evidence from different countries, different time periods, and different datasets, compiled using a variety of research methodologies.

Through an analysis of data from EU countries, Segheri et al. showed that higher self-reported levels of health are highly correlated with greater life satisfaction. Appleton and Song found that this was also true for urban residents in China. Of those who believed they were "very unhealthy", only 14% were satisfied or very satisfied with their lives. In contrast, of those who believed they were very healthy, 44% were (very) satisfied. The authors interpreted this to mean that ill health brought about negative emotions and financial burdens, which in turn negatively impacts life satisfaction.

Appleton and Song also pointed out that unemployment has a strong impact on the life satisfaction of urban residents in China. Unemployment has a significant direct impact on life satisfaction, even after controlling for income and other factors. Diener and Biswas-Diener found that most existing studies have pointed out that unemployed persons are significantly less happy, even after controlling for income. Their paper attributed this to cultural norms, as a lack of unemployment leads to feelings of inadequacy. The paper also noted that unemployed persons often receive less respect, especially for men. However, Chinese scholars often neglect to account for the social pressures arising from unemployment when constructing analytical models of life satisfaction. Alternatively, they take a one-dimensional view of unemployment (i.e. whether one has a job), without considering the considerable range of factors involved. Obviously, unemployment due to *xiagang*⁴ is different from unemployment due to personal reasons. A failure to account for such factors weakens the causal relationship between unemployment and life satisfaction. For instance, the model built by Guan (2010) found that life satisfaction is not significantly impacted

⁴ See note in Chapter II. –Trans.

by whether one has a job. This serves as a reminder to exercise care in selecting indicators when analyzing the impact of unemployment and accompanying pressures on life satisfaction.

As for the time effect, a literature review by Dolan et al. found how one spends their time strongly influences life satisfaction. Existing studies have focused on how subjective wellbeing is affected by the frequency and time spent on work, commuting, caring for others, volunteer work, exercise, and religious activities.

6.2.5 Establishing our Analytical Framework

Based upon existing research on subjective wellbeing, happiness, and life satisfaction, this chapter argues that life satisfaction is more appropriately analyzed through a framework that includes economic, social and environmental factors. At a practical level, these factors provide more comprehensive insights into life satisfaction, while also providing a more reliable theoretical and empirical basis for policy formulation and implementation. At a technical level, a more comprehensive analytical framework reduces errors and allows us to more accurately explain the impact of the various relevant factors.

Firstly, one's economic standing, as measured mainly through income, provides the material conditions necessary for sustaining daily life. Although there is still much debate among researchers regarding the impact of income on life satisfaction, there can be no doubt that income cannot be excluded as an underlying factor. Secondly, one of the goals and motivations for our chapter is to re-examine institutions and policies that promote socio-economic development. Therefore, in addition to economic factors, we also consider social and environmental factors related to such policies and institutions. Relevant social factors mainly refer to relevant social systems and public services, as well as the evaluation thereof, while environmental factors mainly refer to environmental conditions in the locality of residence. Existing research has shown that, of the social factors, levels of social security, social equity, and quality of public services have a significant impact on life satisfaction. Meanwhile, significant environmental factors include objective environmental indicators and subjective opinions on environmental quality. In addition to factors of the external environment (i.e. the social environment and the natural environment), an individual's life satisfaction is also related to their lifestyle and quality of life. Current research has clearly indicated that an individual's life satisfaction is also related to their health, employment status, and how the individual allocates their time across various activities. The analytical framework for this chapter is illustrated in Fig. 6.1.

Our analytical framework includes economic factors (the material conditions for sustaining daily life), non-economic factors (social systems and public services, eco-environmental quality, and individual quality of life), the external environment (social factors and environmental factors), and internal factors (material conditions and individual quality of life). These factors are largely mutually independent. Figure 6.2 shows the structure of our analytical framework. In particular, the level of economic

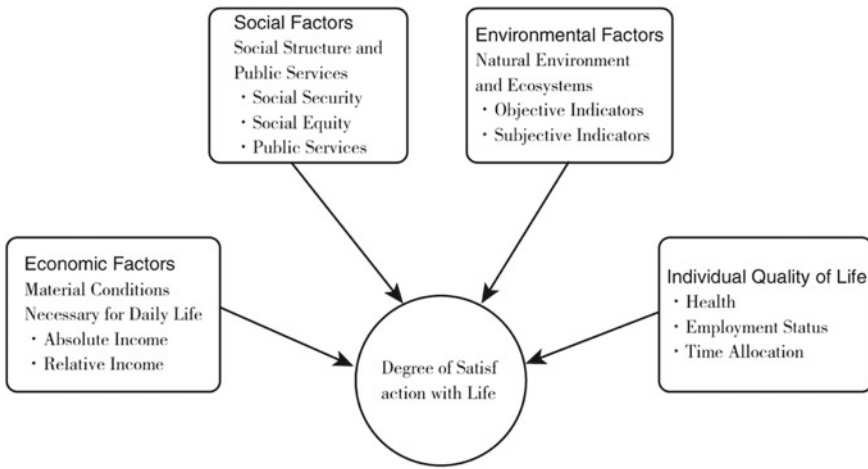


Fig. 6.1 Analytical framework for the factors underlying life satisfaction

development, an economic aspect of the external environment, is a macro-level variable. As our chapter uses micro data, such factors have not been included in our analysis.

This analytical framework constructed from the abovementioned theoretical assumptions is able to more comprehensively account for differences in life satisfaction and thereby improve the reliability of our analysis. Although our chapter has argued for the use of comprehensive analytical frameworks, it remains impossible to include all possible underlying factors. Instead, we have opted to only include those factors important to our purposes and relevant to our theoretical assumptions

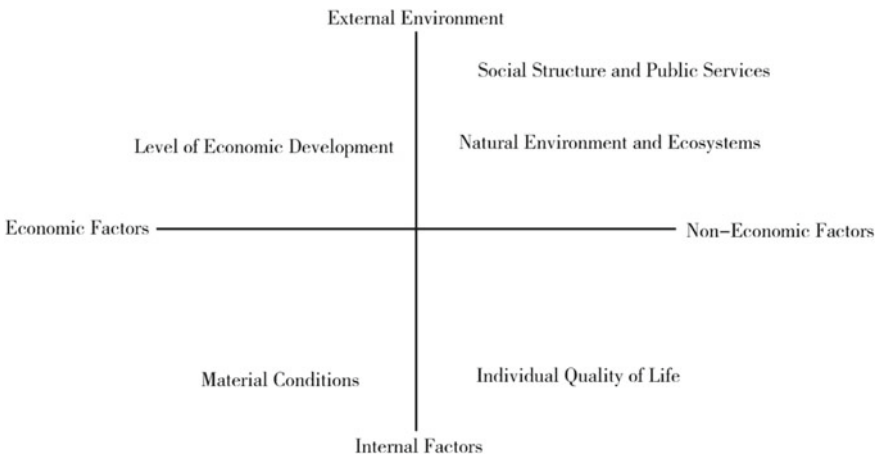


Fig. 6.2 Structure of the life satisfaction analytical framework

in our framework, the validity and robustness of which requires further empirical verification.

6.3 Comparing Life Satisfaction Levels

Our chapter uses data from the 2013 Chinese General Social Survey, coordinated by the Institute of Sociology at the Chinese Academy of Social Sciences. The survey uses a multi-stage random sampling method that covers 30 urban/rural areas in 30 provinces/autonomous regions/municipalities directly under the central government. The sampling design ensures that the data is respectively representative of urban and rural areas. The CGSS 2013 collected 10,206 valid responses from Chinese citizens aged 18 or above.

In China, the factors underlying life satisfaction vary widely between urban and rural localities, given that the social safety net and quality of public services are poorer in rural areas. This means that, although both social security and public services significantly impact life satisfaction in both urban and rural localities, there may be differences in the underlying mechanisms. For this reason, our chapter will focus on the life satisfaction of urban residents.

The CGSS 2013 includes a set of questions that measure life satisfaction. Respondents are first asked to rate their satisfaction with their educational attainment, health, social life, family relations, household economic situation, leisure, and entertainment, before being asked to rate their overall satisfaction (“On the whole, how satisfied are you with life?”) Respondents are asked to rate their answers on a scale of 1–10. A score of 1 means “very dissatisfied” while a score of 10 means “very satisfied”. Average score for urban residents was 6.84.

Using data from the Gallup World Poll, the World Happiness Report reports average happiness levels in China from 2010 to 2012 to be 4.978 (out of 10), an increase of 0.257 over levels from 2005 to 2007. This put China in 93rd place among 156 countries. The World Values Survey revealed a similar trend, where life satisfaction was 6.85 (out of 10) for the average Chinese resident, putting China in 31st place among 58 countries, a slight improvement over 2005–2009 rankings, where China was in 36th place.

As previously discussed, analysis by Easterlin et al. found that life satisfaction in China from 1990 to 2012 followed a U-shaped curve. As shown in Fig. 6.3, domestic data indicates that social equity was higher in China in 1990, when the average Chinese resident scored their life satisfaction at 7.29. Life satisfaction dipped to a low of 6.53 in 2001 before rebounding somewhat. Liu Junqiang et al. (2012) used CGSS data to stress that happiness levels rose steadily from 2003 to 2010 and argued against the Easterlin paradox. Based on a five-point scale, the level of happiness was 3.27 in 2003 and 3.77 in 2010. If respondents who indicated that they are “happy” and “very happy” are categorized as one group (similarly for those who are “unhappy” or “very unhappy”), 72.6% of respondents were happy with life in 2010, up from 37.3% in 2003, while only 9.8% were unhappy in 2010, down from 12.9% in 2003.

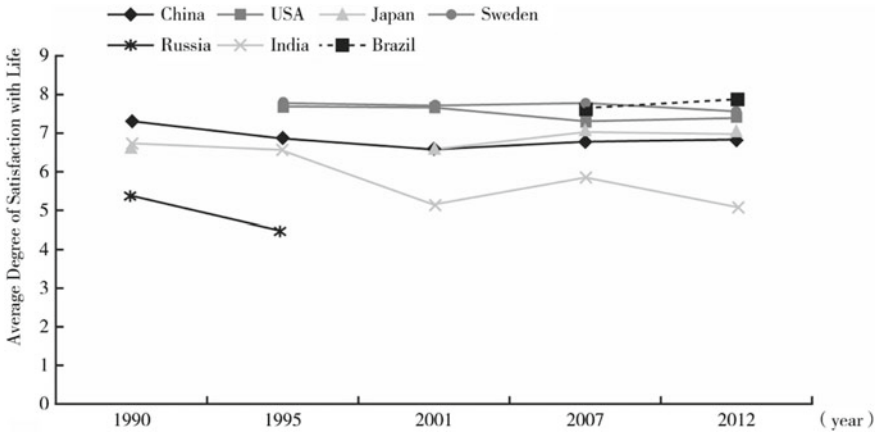


Fig. 6.3 Life Satisfaction in China, BRICS nations and Developed Countries (World Values Survey). Source <http://www.worldvaluessurvey.org/WVSONline.jsp>. The horizontal axis represents the years that China conducted relevant surveys. Corresponding surveys for other countries were conducted within two years of the corresponding year in the horizontal axis

We have also compared the life satisfaction of Chinese residents with BRICS countries, major developed countries, and Nordic countries with strong public welfare systems. As shown in Fig. 6.3, Chinese residents reported lower levels of life satisfaction than residents of the US (representative of developed countries) and Sweden (representative of countries with a strong public welfare system). Life satisfaction was also lower in China than in Japan post 2001. However, as far as trends are concerned, US citizens have reported lower life satisfaction levels since 2001, while the reverse is true for China. The level of life satisfaction in Brazil is comparable to that of the US and Sweden, and also much higher than that of other BRICS nations. Life satisfaction is relatively low in India and Russia.

A comparison with other countries not only reveals differences in the level of economic development, but also differences of culture and history. Although the US has been affected by such factors as the economic crisis and a widening wealth gap, the overall strength of its economy is still able to sustain a high standard of living for its citizens. Thus, life satisfaction levels in the US remain relatively high, on par with developed countries with strong public welfare systems. Brazil's relatively high level of life satisfaction is largely related to its unique cultural and social context. Residents of Latin American countries are more oriented towards desirable goals and positive emotions. Meanwhile, lower life satisfaction levels in Russia are probably related to social instability, lower incomes and ideological crisis after the dissolution of the Soviet Union. However, data indicates that life satisfaction in Russia has improved greatly since 2007.

Easterlin et al. attributed changes in life satisfaction in China to greater materialistic desires, while Liu et al. (2012) emphasized that economic development leads to higher levels of happiness. In reality, there is no contradiction between the trends

unearthed by these two studies, as well as the attributed underlying factors. In the 1990s, market reforms were necessary for restoring China’s economy and raising living standards, but a widening rich-poor divide and upheaval of existing moral values eventually resulted in a sustained decline in life satisfaction and happiness. Since 2003, both the government and the general public have begun to rethink the consequences of “blindly pursuing GDP growth”. A renewed focus on income equity, livelihood security and cultural development led to a rebound in life satisfaction levels. Materialistic desires stimulated by economic growth may also be interpreted as a response to less-than-ideal institutions and policies, which has created new imperatives for reform. Therefore, despite the “negative” impact of greater materialistic desires, we should also observe that new priorities that lead to more comprehensive socio-economic development, during the initial and “maturity” phase of market reforms, may just be key to understanding trends of change in life satisfaction.

Figure 6.4 shows the life satisfaction of Chinese citizens, as derived from data from the CGSS 2013. Satisfaction with family relations (8.26), social life (6.99), and health (6.95) are greater than overall life satisfaction, indicating that these factors play a role in enhancing overall life satisfaction. Meanwhile, overall life satisfaction is lowered by satisfaction with educational attainment (5.66), household economic situation (5.81), and leisure and entertainment (5.83).

In our analysis, overall life satisfaction is the dependent variable while satisfaction with various aspects of life serve as independent variables. We then construct a regression model to examine how, and to what degree, satisfaction with the various aspects of life affect overall life satisfaction. As shown in Table 6.1, our overall model is statistically significant and can account for 56.2% of the variability in overall life satisfaction.

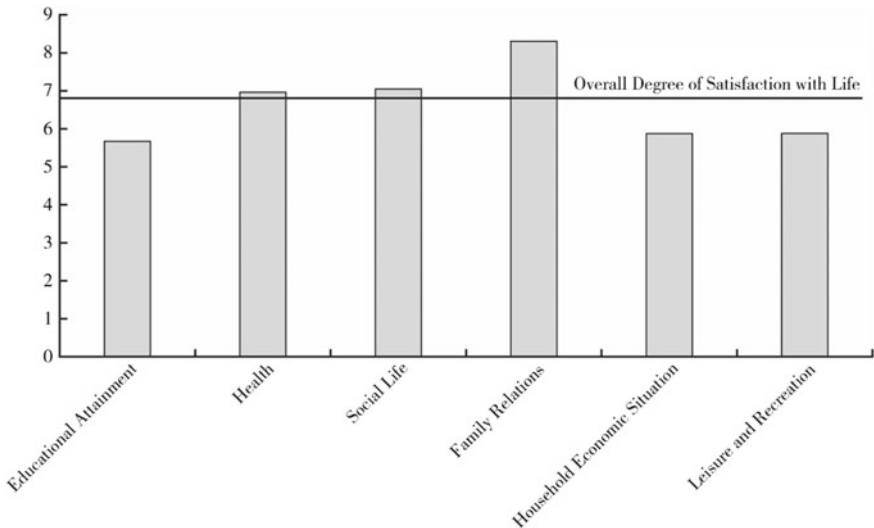


Fig. 6.4 Life satisfaction of urban residents (by category) (1 = very dissatisfied, 10 = very satisfied)

Table 6.1 Decomposition model for overall life satisfaction (linear regression model)

Satisfaction with various aspects of life	Coefficient	Satisfaction with various aspects of life	Coefficient
Educational attainment	0.070 *** (0.008)	Household economic situation	0.291 *** (0.010)
Health	0.064 *** (0.009)	Entertainment and leisure	0.222 *** (0.009)
Social life	0.067 *** (0.011)	Constant	0.717 *** (0.092)
Family relations	0.222 *** (0.011)	Sample size	5539
		Adjusted R ²	0.562

Note Numbers in brackets represent robust standard errors for the relevant coefficients
 *** $p < 0.01$

Individual variables of our model are also statistically significant. After controlling for other variables, satisfaction with one's household economic situation has the greatest impact on overall life satisfaction. This indicates that, in our measurement framework, superior material conditions exert the largest impact on increased life satisfaction for urban residents. Meanwhile, satisfaction with family relations and leisure/entertainment are the second-most important factors underlying greater life satisfaction. In contrast, levels of satisfaction with social life, health, and educational attainment have a lesser impact.

6.4 Analysis of the Factors Underlying Life Satisfaction

Based on our analytical framework, we will seek to elucidate how life satisfaction is impacted by economic, social, environmental, and quality-of-life factors after controlling for relevant demographic variables. With regards to economic factors, some academic papers use individual income as a proxy, while others refer to household or per capita income. Our chapter uses household income, as individual life opportunities are not only affected by individual income, but also the income of others in the same household, meaning that the economic resources available to any one individual is more accurately measured by household income. Furthermore, respondents adopt inconsistent definitions for "number of persons in the same household", resulting in larger disparities in household size. Therefore, total household income is used to measure a respondent's absolute income.

As for indicators that measure relative income, a lack of tracking data makes it impossible to determine changes in household income. However, the survey asked respondents to rate how their socio-economic status and living standards have changed over the past five years. This allows us to approximate both vertical changes (i.e. current income compared to past income) and horizontal changes (i.e. income levels relative to one's peers). Two methods are commonly used in existing research

to measure relative income levels (relative to one's peers). The first is the "objective measurement method". For instance, this method would measure the gap between an individual's income and the average income of persons of similar educational attainment, age, or income interval. The other method is the "subjective evaluation method", which asks a respondent to select a subjective benchmark and rate their income level accordingly.

Guan (2010) advocates the subjective evaluation method, arguing that no system of objective indicators can accurately reflect a respondent's subjective appraisal of their income level. In Guan's study, respondents are commonly asked to rate "their socio-economic status at the local level". Although "local level" may be overly vague, the phrasing of this question allows respondents to indicate the (subjective) geographic scope of their social relations and relevant benchmarks, making it more relevant as a "horizontal" measure of relative income. Guan (2010) also used relative income (defined using various reference indicators) to build relevant models that demonstrate the robustness of using an individual's subjective appraisal of their income status to predict their level of life satisfaction.

As for social factors, our chapter focuses on three aspects: social security, social equity and public services. In existing research, levels of social security are often measured by health and old-age insurance. As old-age insurance for Chinese civil servants and employees of public institutions have not been fully integrated, they do not contribute towards old-age insurance funds. In addition, our data does not include detailed variables for persons not entitled to old-age insurance coverage. These factors make it impossible to measure the level of social security through objective indicators related to old-age insurance. In addition, a large number of respondents enjoy health insurance coverage. However, the specific type of health insurance is not related to their level of social security, meaning that objective health insurance indicators are not reliable indicators of social security. In contrast, subjective indicators, i.e. satisfaction with old-age and health insurance, are more effective in measuring the level of social security. In questions related to social equity, respondents are most concerned with the rich-poor divide and income distribution. Thus, we assess the level of social equity through respondents' ratings of "wealth and income distribution" equity. Public services are often related to the necessities of daily life. Our chapter uses respondents' ratings of government efforts regarding healthcare and housing security as a proxy for the quality of public services.

The satisfaction of respondents with the environmental quality in their locality of residence is used as a proxy for environmental factors. As for individual quality of life, the present chapter mainly focuses on health, employment status, and working hours. Although our data lacks variables that directly measure health status, there are a group of variables that measure the burdens of everyday life, including "heavy medical expenses", which reveal the mechanisms by which health status influences life satisfaction. Because these provide a more accurate means for measuring the impact of health on life satisfaction, the present chapter opts to evaluate health factors using such variables that measure economic burdens. Many researchers have also noted that unemployment is a factor that strongly affects life satisfaction. In the CGSS 2013, 3.6% of urban respondents are currently unemployed, albeit for

various reasons, including employer-related factors (bankruptcy, enterprise reform, *xiagang/neitui/maiduan gongling*,⁵ forced resignation), personal factors (family reasons, health, resignation), failure to find a job after graduation, and family responsibilities. Thus, a respondent's life satisfaction level cannot be effectively explained by his or her employment status. Additionally, there are technical difficulties in identifying whether a respondent is "truly unemployed".

Similar to how health factors are measured, the present chapter measures unemployment risks faced by a respondent or their family members by asking if respondents face psychological pressures due to the unemployment or job instability of a family member. This clearly defined "pressure—satisfaction" theoretical assumption allows us to more accurately measure the impact of unemployment. In the CGSS 2013, there is only one variable regarding working hours—"Since the start of the year, how many hours have you spent per day in your nonfarm job?" As more than 1/3 of respondents are currently out of work, while 12% of employed respondents are full-time farmers, we have had to omit this variable, given that its inclusion would result in the loss of much respondent data.

A range of demographic variables commonly used in existing research were included as control variables, including gender, age, marital status, household registration, and education attainment. Occupational factors were omitted despite their relevance, given their significant correlation with educational attainment (a correlation coefficient of 0.3324). Only 5% of sample data originate from Beijing and Shanghai (Guangzhou and Shenzhen were not included in the survey), while 47% of respondents did not indicate whether they were Communist Party members. Because incomplete information affects the reliability of statistical inference, residential locality and Party membership were omitted from our analysis, despite being commonly used demographic variables. Variables included in our model, along with descriptive statistics, are listed in Table 6.2. Our model applies the natural log transformation on total household income to reduce collinearity and heteroscedasticity.

Overall life satisfaction, measured as a continuous variable, is the dependent variable in our stepwise regression model. Economic, social, environmental and individual quality of life factors are successively introduced as explanatory variables to test the ability of our model to account for changes in the independent variables. Appropriate weights are also given to age and gender to make our samples more consistent with population demographics (based on China's sixth census). Our various linear regression models are described in Table 6.3.

Our regression results show that all models are able to explain changes in life satisfaction, from Model 1, whose independent variables include only absolute income, to Model 6, which includes all relevant variables. The explanatory power of our model increases as successive independent variables are introduced.

Model 1, where total household income is used as a proxy to measure absolute income levels, is able to explain 4.4% of variation in life satisfaction. Total household income is positively correlated with life satisfaction at a statistically significant level.

⁵ See note in Chapter II. –Trans.

Table 6.2 Descriptive statistics for relevant dependent and independent variables

Variable	Value/definition	Sample size	Mean	Standard deviation
Overall life satisfaction	1 = very dissatisfied; 10 = very satisfied	5574	6.842	1.819
Household income (past year)	CNY 0–1.0100000	5191	74,383.92	177,796.3
Household income (past year) (ln)	6.492–16.130	5170	10.806	0.890
Change in living standards compared to five years ago	1 = large decline; 2 = some decline; 3 = no change; 4 = some improvement; 5 = large improvement	5542	3.726	0.950
Relative socio-economic status in locality of residence (subjective rating)	1 = low; 2 = below average; 3 = average; 4 = above average; 5 = high	5490	2.357	0.893
Satisfaction with old-age insurance	1 = very dissatisfied; 10 = very satisfied	5009	6.276	2.488
Satisfaction with health insurance	1 = very dissatisfied; 10 = very satisfied	5278	6.553	2.371
Wealth and income distribution	1 = very unfair; 2 = unfair; 3 = fair; 4 = very fair	5171	2.149	0.732
Appraisal of government rent regulation and affordable housing policies	1 = very poor; 2 = poor; 3 = good; 4 = very good	4467	2.406	0.786
Appraisal of government-provided healthcare services	1 = very poor; 2 = poor; 3 = good; 4 = very good	5304	2.767	0.633
Satisfaction with environmental quality in locality of residence	1 = very dissatisfied; 10 = very satisfied	5582	6.250	2.009
Respondent faces heavy financial burdens due to high medical expenses	1 = yes; 0 = no	5549	0.278	0.448
Respondent faces pressure due to a family member's unemployment or job instability	1 = yes; 0 = no	5556	0.289	0.453

(continued)

Table 6.2 (continued)

Variable	Value/definition	Sample size	Mean	Standard deviation
Gender	1 = male; 2 = female	5583	1.542	0.498
Age	1 = 18–25 2 = 26–35 3 = 36–45 4 = 46–60 5 = over 60	5583	3.153	1.208
Marriage status	1 = married (including cohabitating couples and first/subsequent marriages); 0 = single (never married, divorced, or widowed)	5575	0.816	0.387
Educational attainment	0 = primary education & below; 1 = junior secondary; 2 = upper secondary (high school/secondary vocational education); 3 = higher vocational education; 4 = bachelor's degree and above	5575	1.553	1.261
Household registration	1 = rural; 2 = urban	5569	1.536	0.499

Estimates in Model 1 are based on adjusted R^2 values. Changes in the explanatory power of the model are examined by successive introduction of other independent variables.

We first introduce variables related to relative income levels—current income versus past income and individual income versus income of one's peers to form Model 2. Absolute income serves as a proxy for living standards, while relative income serves as a proxy for self-assessed socio-economic status. In Model 2, we find that all three variables are positively correlated with increased life satisfaction at a statistically significant level. Model 2 is able to explain 17% of variation in life satisfaction, which clearly indicates that relative income has a large impact on the life satisfaction of urban residents.

In Model 3, we introduce five variables to measure three different social factors: level of social security, level of social equity, and quality of public services. We observe another significant rise in the explanatory power of our model—Model 3 is able to account for 26% of variation in life satisfaction. Economic factors remain statistically significant, while the newly introduced social variables are also significantly and positively correlated with life satisfaction. We find that higher levels of satisfaction with old-age and health insurance, higher (subjectively evaluated) income equity, and favorable views of government housing and healthcare policies

Table 6.3 Regression model for factors underlying urban quality of life

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>Economic factors: absolute and relative income</i>						
Household income (ln)	0.429 *** (0.031)	0.210 *** (0.030)	0.296 *** (0.035)	0.300 *** (0.034)	0.246 *** (0.034)	0.182 *** (0.036)
Change in living standards		0.383 *** (0.030)	0.266 *** (0.033)	0.244 *** (0.033)	0.222 *** (0.032)	0.231 *** (0.032)
Relative socioeconomic status in locality of residence (subjective rating)		0.518 *** (0.032)	0.409 *** (0.036)	0.370 *** (0.036)	0.321 *** (0.036)	0.289 *** (0.036)
<i>Social factors: social security, social equity and public services</i>						
Satisfaction with old-age insurance			0.104 *** (0.017)	0.092 *** (0.016)	0.084 *** (0.016)	0.080 *** (0.016)
Satisfaction with health insurance			0.064 *** (0.018)	0.050 *** (0.017)	0.047 *** (0.017)	0.047 *** (0.017)
Equality of Income Distribution			0.186 *** (0.040)	0.149 *** (0.039)	0.138 *** (0.039)	0.153 *** (0.040)
Appraisal of government housing security policies			0.226 *** (0.040)	0.182 *** (0.038)	0.175 *** (0.038)	0.159 *** (0.038)
Appraisal of government healthcare policies			0.142 *** (0.049)	0.072 (0.048)	0.057 (0.048)	0.085 * (0.048)
<i>Environmental factors: appraisal of environmental quality</i>						
Satisfaction with environmental quality in locality of residence				0.177 *** (0.016)	0.173 *** (0.016)	0.172 *** (0.016)
<i>Individual quality of life: health and employment</i>						
Economic burden due to high medical expenses					-0.340 *** (0.068)	-0.342 *** (0.068)
Economic burden due to a family member's unemployment or job instability					-0.321 *** (0.067)	-0.269 *** (0.067)
<i>Control variables</i>						

(continued)

Table 6.3 (continued)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Female						0.137 *** (0.052)
<i>Age (reference group: persons over 60)</i>						
18–25						–0.104 (0.126)
26–35						–0.453 *** (0.102)
36–45						–0.568 *** (0.094)
46–60						–0.338 *** (0.088)
Married						0.315 *** (0.084)
<i>Educational attainment (reference group: primary education and below)</i>						
Junior secondary						0.150 * (0.090)
Upper secondary (high school/secondary vocational education)						0.279 *** (0.100)
Higher vocational education						0.465 *** (0.113)
Bachelor's degree and above						0.639 *** (0.117)
<i>Urban household registration</i>						
Constants	2.187 *** (0.337)	1.915 *** (0.321)	–0.720 * (0.400)	–1.144 *** (0.389)	0.001 (0.409)	0.433 (0.425)
Sample size	5162	5066	3552	3551	3530	3513
Adjusted R ²	0.044	0.170	0.261	0.295	0.307	0.325

Robust standard errors for each coefficient are included in parentheses

*** $p < 0.01$; * $p < 0.1$

all lead to greater levels of life satisfaction. This indicates that social factors have a strong influence on the life satisfaction of urban residents.

Model 4 introduces variables that measure environmental factors. We observe that life satisfaction is significantly and positively correlated with levels of satisfaction with local environmental quality (i.e. near locality of residence). The introduction of environmental factors raises the explanatory power of our model, which can now explain 29.5% of variation in life satisfaction. Clearly, environmental factors have a strong impact on residents' life satisfaction. However, after the introduction of these

factors, subjective appraisals of government healthcare policies become a statistically insignificant to levels of life satisfaction.

In Model 5, factors that impact individual quality of life are included, which are measured through health and employment pressures faced by both respondents and their households. Both medical expenses and household unemployment are negatively and significantly correlated with life satisfaction. Model 5 can explain 30.7% of variation in life satisfaction. With the exception of subjective appraisals of government healthcare policies, all variables considered in Model 5 are statistically significant.

Therefore, we see that a model that incorporates both economic and non-economic factors (i.e. social and environmental factors, which are factors of the external environment, and individual quality of life) can account for nearly 31% of variation in life satisfaction, while the explanatory power of the model increases as more variables are included. This indicates that each of these variables have a strong influence on the life satisfaction of urban residents. The results of our model also indicate that our analytical framework is sufficiently robust.

All explanatory variables are included in Model 6, along with relevant control variables. Model 6 explain 32.5% of variation in life satisfaction. Subjective appraisal of government healthcare policies is statistically significant at the 10% level, while other explanatory variables are significant at the 1% level. Among the control variables, gender, marriage status, and level of educational attainment are statistically significant. Females, married respondents, and those in long-term relationships all show a higher level of life satisfaction. Similarly, those who have graduated from junior secondary school, high school, vocational education or university have higher levels of life satisfaction than those who have not received formal education or have only completed primary school. These findings are consistent with existing research (Guan 2010; Liu et al. 2012).

Interestingly, age has a U-shaped relationship with life satisfaction. Life satisfaction is greatest for the youngest group of respondents (18–25) and the oldest group (above 60). The groups in between (26–35; 36–45; 46–60) report significantly lower levels of life satisfaction, possibly because they face pressures related to work, family, and supporting elderly parents. Relevant regression coefficients are highest for those between 36 and 45, meaning that life satisfaction is lowest in this age group. This finding is also consistent with that by Appleton and Song. However, household registration is not a statistically significant factor. One obvious interpretation is that all sample data in our analysis are provided by residents of urban localities. Regardless of whether a respondent has an urban or rural household registration, they are generally entitled to use of urban infrastructure and resources, even if some public services may not be available to the latter. This lowers the impact of household registration on life satisfaction in our model.

Our analysis shows that life satisfaction in China continues to be strongly influenced by economic factors. Absolute income exerts a significant impact, but the impact thereof weakens after income levels reach a certain stage. Suppose there are two urban residents, one with an annual household income of CNY 30,000 and the

other with an annual household income of CNY 80,000. Based on Model 6, life satisfaction of the wealthier resident will be higher by 0.179 points, after controlling for other factors. This gap narrows, however, as income levels increase. Life satisfaction would only be 0.088 points higher for a resident with CNY 130,000 in total annual household income than a resident with CNY 80,000. The significance of absolute income to the life satisfaction of Chinese residents is typical to the context of a developing country with high economic growth rates. This also supports the idea proposed by Diener and Biswas-Diener that the degree of social affluence is a moderating variable between income and life satisfaction. Similarly, within a specific society, general income levels moderate the effect of income on life satisfaction, which is why the income effect is weaker among high-income groups.

In our analysis, relative income has a stronger influence than absolute income on life satisfaction, which is consistent with the conclusions of existing Chinese empirical studies (Luo 2009; Guan 2010; Liu et al. 2012). This also suggests that the theoretical framework proposed by Easterlin can account for variation in life satisfaction. Among the two factors we used to measure relative income, self-assessment of one's socio-economic status relative to one's peers has a larger regression coefficient, indicating that a sense of relative superiority can significantly increase life satisfaction. In Model 6, after controlling for other variables, life satisfaction scores increase for every step up in our five-tier socio-economic ranking system. For instance, life satisfaction levels are 0.289 higher for those in the middle tier than those in the lower-middle tier. In contrast, an increase in current income of one tier over past income, for instance from "no change" to "slight change", leads to a rise of only 0.231 in life satisfaction.

Our analysis has also highlighted the impact of social and environmental factors on life satisfaction. After introducing relevant variables, the explanatory power of our model increased by nearly 13%. Among factors related to social security, satisfaction with old-age insurance had a larger regression coefficient than satisfaction with health insurance. This indicates that the former has a larger impact on overall life satisfaction, suggesting that financial security during retirement is a pertinent livelihood security issue for urban residents. Opinions on income equity also have a significant impact on life satisfaction. Suppose Resident A believes that income distribution is highly unfair, while Resident B believes that it is relatively fair. All other factors being equal, life satisfaction would be 0.306 points higher for Resident B. In addition, one's appraisal of government housing policies has the greatest impact on life satisfaction among all the indicators measuring the quality of public services.

As environmental issues, for instance haze and polluted tap water, become more widespread, public attention has turned towards environmental quality. Our model indicates that satisfaction with the living environment has a significant impact on life satisfaction. All other factors being equal, life satisfaction for a resident who is highly satisfied with their local environment (for instance, a score of 9 points) would be 1.204 points higher than a resident who is distressed with the local environmental quality (for instance, a score of 2 points).

Table 6.4 Decomposition model for environmental satisfaction (linear regression model)

Independent variable	Mean	Regression model	Independent variable	Mean	Regression model
Noise pollution	2.703 (0.926)	0.266 *** (0.029)	Poor local sanitation	2.767 (0.817)	0.915 *** (0.032)
Air pollution	2.652 (0.908)	0.359 *** (0.032)	Constants		1.426 *** (0.091)
Water pollution	2.824 (0.907)	0.222 *** (0.029)	Sample size	5407	5407
			Adjusted R ²		0.365

Note Standard deviation is included in parentheses under mean values; robust standard errors for relevant coefficients are included in parentheses under regression model values

*** $p < 0.01$

Based on the survey data, our chapter takes a closer look at residents’ satisfaction with local environmental conditions. Before asking respondents to rate their satisfaction with environmental quality, the CGSS 2013 asked them to rate environmental issues on a four-point scale, including noise pollution, air pollution, water pollution, and the cleanliness of their local residential area. A score of 1 meant that the issue was “very severe”, 2 meant “quite severe”, 3 meant “not very severe”, while 4 meant that the issue was non-existent. As shown in Table 6.4, air pollution was reported as the most serious issue (average score of 2.652), with 39% of respondents considering it to be “very severe” or “quite severe”. This is closely followed by noise pollution, with an average score of 2.703.

Our chapter uses four environmental pollution indicators as independent variables to construct a regression model for environmental satisfaction. The results of our model show that these four selected indicators each have a significant impact, allowing our model to explain 36.5% of variation in environmental satisfaction. Residents’ appraisal of the cleanliness of their local environment turned out to have the strongest impact. After controlling for other variables, a belief that local sanitation is not a severe issue increases environmental satisfaction levels by 1.83 points. This is followed by appraisals of air quality, where environmental satisfaction increases by 0.718 points for residents who believe that air pollution is “not very severe”. Our empirical analysis underscores the importance of regular urban sanitation and air quality in improving the happiness and life satisfaction of residents.

6.5 Conclusion and Discussion

Our chapter has constructed a framework for analyzing the factors underlying life satisfaction before conducting an empirical analysis of the life satisfaction of urban residents. We first proposed that a framework for analyzing life satisfaction should include economic, social, environmental and individual quality of life factors. Such a framework would incorporate the material conditions necessary to sustain daily

life, as well as variables related to the external environment and the pressures of life faced by an individual, thus allow us to more comprehensively survey the factors that affect life satisfaction.

Empirical analysis then allows us to understand trends of change in the life satisfaction of urban residents, while also verifying the validity and robustness of our analytical framework. Our study showed that the average urban resident was quite satisfied with life (average score of 6.84). Further empirical analysis then reveals that both absolute and relative income had a significant impact on life satisfaction. Among the two variables for relative income, income levels compared with one's peers had a stronger impact.

Our analysis has also incorporated social and environmental factors. Social factors are measured through the level of social security, level of social equity, and quality of public services, each of which have a significant impact on the life satisfaction of urban residents. Meanwhile, the greater public attention on environmental issues is reflected in our analysis, which shows that greater satisfaction with local environmental conditions is significantly correlated with greater overall life satisfaction. A more detailed analysis then found that, out of four environmental indicators, levels of local sanitation and air quality have the greatest impact on environmental satisfaction. Individual quality-of-life factors, as measured by pressures arising from medical expenses and family members' unemployment are significantly and negatively correlated with life satisfaction.

Our analysis also found that, despite the importance of income to life satisfaction, money alone does not lead to happiness. The social security system, income distribution, and environmental quality are significantly correlated with life satisfaction. As China's economy continues to develop, people will come to demand a greater quality of life after their basic needs are fully met. Such demands will include safe food products, clean air, quality education, and a clean government. These demands require the government to replace the "GDP at all costs" model with a people-oriented development model. After all, continued support by the people requires progress in relevant institutions and policies, which are necessary for sustaining upward trends in life satisfaction. Whether or not the "turning point" of the Easterlin paradox can be successfully navigated represents a major challenge for China's socio-economic development.

As Premier Li Keqiang pointed out in his government work report at the Third Session of the Twelfth National People's Congress, "developing a tightly woven and sturdy safety net to secure and improve living standards" requires "put[ting] people first".⁶

Our study finds four policy implications.

Firstly, policy should seek to sustain growth in real incomes, as well as focus on increasing the incomes of less affluent social groups, which would greatly enhance their life satisfaction.

Secondly, satisfaction with life and government policies can be raised by enhancing livelihood security. This can be achieved through improvements to existing

⁶ https://language.chinadaily.com.cn/2015-03/17/content_19834004_2.htm.

social security systems, such as housing security, and old-age and health insurance, greater government efficiency, and better public services.

Thirdly, there should be greater reforms to income distribution systems. More equitable income distribution would lead to a greater sense of income equity and confidence in life.

Fourthly, environmental governance should be an important part of the government agenda. The government should focus on environmental issues of public concern, strengthen relevant enforcement efforts, and promote the development of a circular economy, in order to achieve sustainable growth in national wellbeing.

The results of our analysis also bear implications for further research on sustainable consumption. For example, Easterlin and Veenhoven both argue that when a country or individual reaches a certain level of material wealth, an increase in income does not necessarily lead to an increase in subjective wellbeing. Empirical analysis has also shown that material conditions are not the most important underlying factors for either happiness or life satisfaction. Therefore, sustained growth in consumption will not lead to significant increases in subjective wellbeing. In contrast, sustainable consumption practices will lead to greater subjective wellbeing through richer inner experiences and sense of accomplishment. This ensures the legitimacy of sustainable consumption practices and principles: lower consumption levels or changes in consumption patterns are desirable if they result in lower environmental harm without sacrificing subjective wellbeing.

This justifies government efforts to encourage green consumption, which will not only enhance ecological balance, but also drive economic growth by popularizing new forms of consumption. During this process, government should strive to create an external environment that encourages the adoption of green consumption practices. Government efforts in this respect should include improvements to infrastructure, enhancements to the quality and administration of public services, and stronger environmental governance, which also happen to have a strong influence on subjective wellbeing. Research has also shown that continual satisfaction of ever greater material desires does not lead to happiness. Instead of lifestyles that emphasize excessive, conspicuous consumption, people should focus more on the quality of life, including a sound work-life balance, good psychological and physical health, and enjoying the sense of achievement that comes from work.

Of course, our research is still lacking in many respects. Because of the limited range of our data, our model does not include certain relevant objective indicators, as well as data on regarding how respondents spend their time. Our model may also be extended in future research, both horizontally and vertically. With regards to a “vertical” extension, panel data or multi-year cross-sectional data can be used to investigate if socio-economic development and changes to demographic/income structures have led to changes in the effects or mechanisms of economic, social, environmental and individual quality of life factors. With regards to “horizontal” extension, one may investigate if the impact of such factors is affected by reason of gender, age, or level of educational attainment. For instance, life satisfaction for the more highly educated may be less affected by economic factors but are more influenced by the level of social equity.

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