

To cite this article: Lun Xia, Xinyi Li. *Exploring the Dynamics of Subjective Well-being in China: The Evolving Impact of Economic and Non-economic Factors*, *Journal of Financial and Economic Dynamics*, 2026, 1(3), 94-119; <https://doi.org/10.66361/jfed.152>

Exploring the Dynamics of Subjective Well-being in China: The Evolving Impact of Economic and Non-economic Factors

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Abstract: Improving residents' well-being is an important goal of every national government. Understanding the factors associated with subjective well-being and their changing characteristics is essential for achieving this goal. Using repeated cross-sectional data from six waves of the World Values Survey in China (1990–2018), this study examines the dynamic evolution of factors associated with subjective well-being. The findings indicate that both economic and non-economic factors are significantly associated with SWB. In the early period, absolute income was the dominant factor. With continuous economic development, the importance of relative income, democracy, fairness, national pride, leisure, trust, and emotional factors has gradually increased, while the influence of absolute income has declined. Heterogeneity tests reveal that high-income groups place greater emphasis on non-economic factors, whereas middle- and low-income groups remain more dependent on absolute income. These findings suggest that although China's economic growth has raised overall living standards, considerable economic pressure persists for most of the population. The results are broadly consistent with theoretical expectations derived from Maslow's hierarchy of needs and social comparison theory.

Keywords: Subjective well-being; Influencing factors; Happiness paradox; Economic factors; Non-economic factors;

1. Introduction

According to Maslow's hierarchy of needs theory, human needs are divided into five levels from low to high: physiological, safety, love and belonging, esteem, and self-actualization. This demand change directly affects the level of human subjective well-being at different stages of development. From material needs to spiritual needs, the factors influencing subjective well-being will also undergo a dynamic evolutionary process. People's definition and pursuit of well-being have also changed in different stages of social development. Specifically, in the early stages of human society, satisfying material needs is the primary source of well-being. People pursue basic living conditions like food, clothing, and shelter. With the development of productive forces and the progress of society, material wealth was gradually enriched, and people began to pursue a higher level of material life, such as better housing conditions, more decadent food options, and more advanced means of transportation.

As material needs are relatively satisfied, people begin to pay attention to their spiritual needs. Spiritual needs include culture, art, education, religious belief, and other aspects, which can meet people's needs

for self-realization, belonging, and meaning pursuit. The enrichment and development of spiritual culture provide people with more sources of well-being. In modern society, the factors influencing subjective well-being have become more diversified. In addition to material needs, spiritual needs have become more abundant, such as social participation, government image, social trust, fairness, and justice, and other factors have also become an important embodiment of spiritual needs.

In the past 30 years, China's economy has developed rapidly and achieved tremendous achievements. In 1985, the primary contradiction in the socialist initial stage of China manifested as the conflict between the people's ever-growing material and cultural needs and the relatively lagging social productive forces. The policy at that time was to encourage certain regions and groups of people to achieve prosperity first and to use their success as a model to drive more extensive social groups toward common prosperity. By 2006, a contradiction between "quality" and "quantity" emerged in economic development. Between 1990 and 2005, while China's economy grew rapidly at an average annual rate of 9.7%, lifting its economic aggregate from the 11th to the 4th position globally, issues such as environmental pollution and social injustice also became increasingly prominent. By 2017, the principal contradiction in Chinese society had shifted to the conflict between the people's ever-growing needs for a better life and unbalanced and inadequate development. China's economy thus entered a new stage of transitioning from high-speed growth to high-quality development. The central government emphasized the need to solidly promote common prosperity and enhance people's sense of gain, happiness, and security. In summary, over the past three decades, China's economic development has exhibited distinct stage-specific characteristics, with people's understanding of happiness differing at each stage and the factors influencing their sense of happiness undergoing corresponding changes. After 30 years of rapid economic development in China, has the people's subjective well-being also increased? Does the Easterlin paradox exist in China? What changes in factors affect subjective well-being? It is worth further exploration.

To explain the dynamic evolution of SWB determinants, we draw upon an integrated theoretical framework combining three complementary perspectives. First, Maslow's hierarchy of needs (Maslow, 1943) provides a foundational understanding that human needs are ordered hierarchically, ranging from basic physiological needs to higher-order psychological needs. As income rises and basic material needs are satisfied, individuals are expected to place greater emphasis on needs related to social esteem, belonging, and self-actualization. This framework offers a useful starting point for understanding why the determinants of SWB may shift with economic development.

However, Maslow's framework alone is largely descriptive and does not fully explain the mechanisms driving this shift. We therefore complement it with two additional theoretical perspectives. Social comparison theory (Festinger, 1954) suggests that individuals evaluate their own circumstances through comparisons with relevant reference groups. Relative deprivation theory (Runciman, 1966) further posits that feelings of deprivation arise when individuals perceive that they are worse off than others with whom they compare themselves. As societies become more affluent and information more accessible, these social comparisons become increasingly salient. This implies that the marginal contribution of absolute income to SWB may diminish over time, while the role of relative income-how one's income compares to others-grows in importance.

The interplay between these mechanisms provides a coherent framework for this study: economic development simultaneously raises absolute living standards (satisfying basic needs) and intensifies social comparisons (elevating the importance of relative standing). This dual process explains why the importance of absolute income may decline while that of relative income and non-economic factors

gradually increases.

2 Literature Review and Hypothesis Development

2.1 Literature Review

The influencing factors of subjective well-being have always been an important topic of concern for economists and sociologists worldwide. Governments in every country should regard enhancing the well-being of the people as an important development goal, and ensuring a happy life for the people is also the ultimate goal of a country's economic development. Scholars have extensively explored this topic from different perspectives and have produced rich research results. In the second half of the 20th century, with scholars from various fields, such as economists, sociologists, and psychologists, joining the research on subjective well-being, its content gradually enriched, forming three influential research areas from the perspective of influencing factors:

The first research field comes from the perspective of absolute income. In early economic research, utility was commonly used to measure an individual's level of welfare. Under the framework of the utility function, it was a consensus in the economic community at that time that as the economy grew, people's well-being would increase as people in countries with higher economic levels were wealthier and could consume more goods or services to improve their utility level (Adams, 1969; Blanchflower & Oswald, 2008). Until 1974, Easterlin's study of post-World War II happiness survey data in the United States found that although the country's economy continued to grow and real per capita income significantly increased, people's happiness levels did not significantly improve, leading to the famous "income-happiness" paradox (Easterlin, 1974). Later, scholars tested and analyzed the paradox of happiness through different samples and came to a regular conclusion: in developed countries and regions, with economic growth, happiness does not increase (ERZOF, 2005; Stutzer, 2004; Ferrer-i-Carbonell, 2005). In developing countries and impoverished regions, happiness will increase accordingly with economic growth. This phenomenon is due to the diminishing marginal effect of income on happiness (Diener, 2013; Easterlin, 2001; Clark & Oswald, 1996). Research from China also reflects this phenomenon. Studies have shown a significant inverted U-shaped relationship between absolute income and happiness, indicating that an increase in income during the low-income stage significantly enhances residents' happiness. However, as income rises, its marginal impact on happiness diminishes (Tian, 2006; Zhang et al., 2011; Zhao et al., 2013).

The second research area comes from the perspective of relative income. The theory of relative income provides a powerful explanation for why well-being does not increase with income; that is, people always have comparability: compared to others, compared to their expectations, even if income has been significantly improved, but this improvement is not as significant as the social average income increase, or if it does not meet their ideal expectations, people will lose, and their well-being may not increase or even decrease. Some scholars believe that among the factors that affect subjective well-being, relative income is more significant than absolute income (Stutzer, 2004; KNIHT, 2009). The sample analysis in Shanghai also confirmed this viewpoint (Zhao et al., 2024). They found that after controlling for factors such as gender, marriage, and social security, there was no significant relationship between absolute income and subjective well-being (McBride, 2001). In response to this phenomenon, Easterlin, the proposer of the "happiness paradox," established a personal utility model based on the "comparison theory," the conclusion shows that when there is a comparison effect, an increase in income will enhance personal utility within a particular stage. When it exceeds a specific critical value, the utility may

decrease (Easterlin, 2001). He also conducted research and found that after controlling for other factors, happiness level is positively correlated with one's absolute income level but negatively correlated with the average social income level (Easterlin, 2006). Using survey data from China, Yu et al. (2018) and Zhang (2021) found that both absolute and relative income significantly impact happiness. However, the impact of relative income is more significant. Luo (2013) found that even after considering relative income factors, the impact of absolute income on subjective well-being cannot be overlooked, both factors have a positive promoting effect on happiness. In addition, as one of the manifestations of relative income, the impact of income inequality on subjective well-being has also received much attention. Studies have shown that widening income inequality will lead to a decrease in subjective well-being among low-income groups (He et al., 2011; Wang, 2011; Cui et al., 2022).

The third research area comes from other influencing factors outside of income. Besides income factors, factors such as demography (Easterlin, 2006), social network (Nieboer & Cramm, 2018; Wang X, 2016; Wilson, 1967; Savinee, 2022), freedom (Inglehart et al., 2008),

Emotions (Brunstein et al., 1998; Graham & Pozuelo, 2017), family (Frijters & Beaton, 2012), and other aspects (Cheng et al., 2009; ChuassonN et al., 1996; Costa & McCrae, 1980;

Joshanloo, 2014; Mock, 2011; Zhao et al., 2024; Yan et al., 2024) can all have an impact on subjective well-being. Regarding demographic factors, most studies have shown that women are happier than men because men tend to take on greater responsibilities and have higher psychological expectations (Easterlin, 2001). Some studies have also shown no significant difference in subjective well-being between men and women (Mock, 2011). From an age perspective, many studies have shown that older adults have lower levels of happiness because they often have poor physical health and are more likely to face aging, illness, and death (Cheng, 2009; Blanchflower & Oswald, 2008). However, Easterlin's research found that older adults have a higher sense of happiness because they have lower life pressure, lower expectations, and are more likely to be satisfied (Easterlin, 2011). Regarding the impact of health on subjective well-being, it is almost unanimously believed that people with poor health conditions have lower happiness levels. Marriage factors are also worth attention, most studies support that marriage can promote happiness. People living alone, divorced, or widowed have lower levels of happiness (Yu et al., 2018). From the perspective of the work situation, Clark et al. (1996) believe that unemployment significantly reduces happiness, and the losses caused by unemployment are not only reflected in income but also have a more significant impact on mental aspects such as frustration, loss, and reputation. Diener (1999, 2001) believes that subjective well-being is a feeling and evaluation of people's satisfaction with their lives, including subjective feelings towards many factors such as work and family.

Based on the existing research literature, it can be concluded that gender, age, education, health, marriage, work status, income, family relationships, and interpersonal relationships are all important variables in explaining well-being. We divided these important influencing factors into six categories: demographic factors, economic factors, work factors, family factors, interpersonal factors, and emotional factors. At the same time, we found that most Chinese research uses cross-sectional data to analyze subjective well-being, lacking dynamic analysis over time. In a specific study, emphasis is often placed on analyzing the impact of one or two factors on subjective well-being, lacking a comprehensive analysis of multiple factors. Moreover, many scholars' studies are based on different samples, and their conclusions often need to be more appropriate for direct comparisons. In view of this, this paper bases some improvements on the existing literature. Given the remarkable improvement in China's economic development and the gradual increase in people's demand for fairness, justice, democracy, environmental protection, and other

aspects has gradually increased, we have added a value influencing factor to form a comprehensive analysis framework for seven factors that affect subjective well-being. Then, we further comprehensively analyzed the influence and relative importance of seven factors on subjective well-being and explored the past 30 years using data from the 1990-2018 World Values Survey.

2.2 Hypothesis Development

Based on the literature review and combined with China's development situation, we propose the following hypotheses:

H1 (demographic factors hypothesis):

(1) Women report higher SWB than men. (2) SWB exhibits a U-shaped relationship with age, with middle-aged adults reporting lower SWB than younger and older groups. (3) Health status is positively associated with SWB. (4) Married individuals report higher SWB than those who are divorced, widowed, or never married. (5) The association between education and SWB may vary across different historical periods due to changing social expectations and labor market conditions.

H2 (economic factors hypothesis):

(1) Both absolute income and relative income are positively associated with SWB. Absolute income is measured by household income group. Relative income is captured by perceived income position-specifically, the subjective evaluation of one's financial situation relative to psychological expectations and social comparisons, which is measured by family financial satisfaction in our analysis (Luo, 2009; Easterlin, 2001). (2) Household savings are positively associated with SWB.

H3 (work status hypothesis):

Work status is one of the main factors affecting subjective well-being, and the more satisfied a person is with their work status, the stronger their subjective well-being.

H4 (family factor hypothesis):

(1) People who trust family members are happier than those who do not trust them. (2) The more satisfied a person is with their family life, the stronger their subjective well-being.

H5 (interpersonal factors hypothesis):

People who perceive others as trustworthy are happier than those who feel they need to be cautious everywhere.

H6 (emotional factors hypothesis):

(1) People often feel lonely or disconnected from the masses and have lower happiness levels. (2) People with positive emotions are happier than those with negative emotions.

H7 (value factors hypothesis):

People who pay more attention to spiritual aspects such as fairness, democracy, leisure, and others are happier.

H8 (Changes in influencing factors):

The relative importance of the seven categories of determinants varies over time. Based on the integrated theoretical framework outlined above, we expect that as China's economy develops and material living standards improve, the contribution of absolute income to SWB will gradually diminish. Concurrently, as social comparisons become more salient and higher-order needs gain prominence, the importance of relative income and non-economic factors-including fairness, democracy, trust, leisure, and emotional well-being-will gradually increase.

This paper attempts to comprehensively examine people's subjective well-being from the perspective of

the seven factors above (H1-H7) and the changing patterns in their importance (H8). It utilizes World Values Survey data to verify whether the hypotheses above align with the current situation in China.

3 Data, Variables, and Model Estimation

3.1 Data Source

The data used in this paper is from the World Values Survey (WVS), an international survey of people's values worldwide in terms of friends, family, marriage, work, politics, social trust, religion, and other aspects. It is performed by member units of the World Social Science Network Alliance and now covers more than 100 countries. The survey was conducted in seven rounds from 1981 to 2022, including six surveys in China in 1990, 1995, 2001, 2007, 2013, and 2018, with sample sizes of 1000, 1500, 1000, 1991, 2300, and 3036, respectively. It is important to note that these are repeated cross-sectional surveys rather than a longitudinal panel; each wave draws an independent sample of the Chinese population. Therefore, changes observed across waves reflect period effects and shifts in population-level associations, rather than individual-level changes over time. The WVS China samples cover both urban and rural populations, though the proportion of urban respondents varies across waves; we include demographic controls (urban/rural residence, education, occupation) to address potential compositional changes.

In the data, there are two questions that reflect the level of subjective well-being. The first is, "On the whole, are you feeling happy?" The option answer is "1. Very happy, 2. Quite happy, 3. Not very happy, 4. Not at all happy" (the lower the value, the happier). The second question is "Overall, are you satisfied with your life?" the answer is from 1 (dissatisfied) to 10 (satisfied) to describe the satisfaction (the higher the value, the more satisfied the life).

In the WVS data, well-being and life satisfaction can be approximate surrogate indicators of subjective well-being. For the convenience of research, the two variables are combined into one variable. According to psychological research, subjective well-being can be decomposed into two main factors, emotional cognition and life satisfaction, which are precisely matched with the well-being level and life satisfaction in WVS data. We adopted the method of combining two variables proposed by Ronald Inglehart (2008), that is, "Subjective Well-Being = life satisfaction $-2.5 \times$ emotional cognition (well-being level)¹". (Justification for the weighting scheme: The weight of 2.5 is not arbitrary but is derived from the principle of scale standardization (categorical variable distance scaling) . Since the two component variables are measured on different scales (10-point vs. 4-point), a direct summation would disproportionately overweight the variable with the larger range. To balance the two components and ensure that each contributes proportionally to the composite measure, the happiness score (4-point scale) is multiplied by a scaling factor that aligns its range with that of life satisfaction. Specifically, the weight of 2.5 is the ratio of the scale ranges: $10 \div 4 = 2.5$. This approach is consistent with standard practices in composite index construction (OECD, 2008; Nardo et al., 2005) and has been employed in prior cross-national SWB research (Inglehart et al., 2008). As a robustness check, we also analyze the two components separately (see Section 5), which yields results consistent with the composite measure). So we get a new subjective well-being variable that comprehensively considers the two factors, recorded as SWB (Subjective well-being). After calculation, the value range of SWB is $-9 \sim 7.5$. Although the new

¹The answer options for emotional cognition in the data are scored inversely, so the negative sign is used here to correct. Life satisfaction is scored on a 10-point scale, while emotional cognition is scored on a 4-point scale, so assigning a weight of 2.5 times is for balance.

variable SWB contains negative values, the numerical value only represents the level of well-being and does not affect subsequent analysis.

3.2 Analysis of the changing trend of subjective well-being

According to the WVS, we calculated the average level of well-being, life satisfaction, and subjective well-being (SWB) of Chinese residents from 1990 to 2018; the results are shown in Table 1.

Table 1 shows that the average level of well-being from 1990 to 2018 was below 2.5 (the average of the options), with an overall average of 2.07, indicating that the overall subjective feeling of residents was happy. The level of well-being fluctuated around 2, with no apparent trend. However, if we take the data from 1990 and 1995 as representatives of the 1990s, we can obtain a well-being mean of 2.00 for the 1990s; taking the data from 2001 and 2007 as representative of the 2000s, the average is 2.10, 2013 and 2018 as representative of the 2010s, with an average of 2.11, it can be seen that the well-being of Chinese residents has decreased; From the perspective of life satisfaction, it was 7.29 in 1990, which was the highest. It showed a downward trend in 1995 and 2001 and slightly rebounded in 2007. If we compare the 1990s and 2000s, it can be seen that life satisfaction also showed a downward trend, while 2013 and 2018 did not show an upward trend.

Table1 Trends in well-being levels, life satisfaction, and subjective well-being

Year	Well-being level	Life satisfaction	SWB
1990	2.05	7.29	2.16
1995	1.95	6.83	1.97
2001	2.13	6.53	1.20
2007	2.06	6.76	1.61
2013	2.08	6.68	1.56
2018	2.14	6.63	1.58
Mean	2.07	6.84	1.70

The data in the SWB column of Table 1 is the mean of subjective well-being (the larger the mean, the higher the subjective well-being), which confirms that residents were happier in the 1990s than in the 2000s. After 2000, subjective well-being showed an overall upward trend, indicating a gentle V-shaped trend in subjective well-being.

We provide the following explanation for the periodic changes in subjective well-being. Firstly, the average subjective well-being of residents does not show a significant upward or downward trend but fluctuates within a small range. This is because people have the instinct to adapt to life. They continuously adapt to the environment and constantly change living standards, resulting in a stable performance of subjective well-being. Secondly, the theory of relative income does play an important role in real life. Although the economy has developed rapidly and income has increased significantly in the past 20 years, people's psychology of Comparison does not make them feel that their well-being has increased but may decrease with the widening income gap. Thirdly, when evaluating subjective well-being, people will consider multiple factors comprehensively.

On the one hand, improving living standards can improve people's well-being. However, the frequent occurrence of negative phenomena such as environmental pollution and social inequality that do not keep pace with economic development can also inhibit improving subjective well-being. Therefore, the

evaluation of subjective well-being by people is the overall feeling after integrating various factors, which depends on the power of comparing positive and negative factors. Positive factors have gradually become dominant, following a slight increase in subjective well-being in the past few years after 2000. In subsequent analyses, we will continue to explore the changes in the factors influencing subjective well-being.

Our finding that life satisfaction did not rise monotonically with China's rapid economic growth is consistent with previous studies examining the Easterlin paradox in the Chinese context. Easterlin et al. (2012) found that China's life satisfaction declined from 1990 to 2000 despite robust GDP growth, a pattern they attributed to rising unemployment and erosion of the social safety net. Kahneman and Deaton (2010) further demonstrated that while income growth improves evaluative well-being (life satisfaction), it has a weaker effect on emotional well-being, suggesting that different SWB components may respond differently to economic change. These findings provide important context for understanding the U-shaped trend we observe in SWB over the study period.

3.3 Analysis of the influencing factors of subjective well-being

3.3.1 Variable selection

We propose a comprehensive analysis framework based on existing literature that fully considers economic and non-economic factors. The dependent variable is subjective well-being, which is an ordered dependent variable. The independent variables are economic and non-economic factors, of which the non-economic factors include six factors: demographic characteristics, work factors, family factors, interpersonal factors, emotional factors, and values. The variable settings of each factor are as follows:

Demographic characteristics include gender, age, education, marital status, and health status.

Economic variables include income (grouped by absolute income, divided into three income groups: low, medium, and high), savings (divided into four groups based on last year's savings situation: save money, get by, spend some savings, and borrowed money, and spent savings and borrowed money), family financial satisfaction, financial satisfaction is a subjective feeling that compares a family's actual financial situation with psychological expectations, as well as with other people's financial situation. It can be used as an approximate substitute for relative income, with variable values ranging from dissatisfied to satisfied measured by 1 to 10. For the convenience of description, we have recorded 1-3 as 1, representing dissatisfaction, 4-7 as 2, representing moderate level, and 8-10 as 3, representing satisfaction. The variables related to satisfaction in the following text are treated this way.

Work status variable: job satisfaction (job satisfaction is a subjective feeling of residents' current work status after considering various work factors, and the variable value and processing method are the same as family financial satisfaction).

Family factor variables include family trust (family trust is a variable that measures residents' overall trust in family members, with variable values of 1. trust completely, 2. trust somewhat, 3. do not trust very much, 4. do not trust at all), family life satisfaction (this variable is a subjective feeling after considering various family factors, and the treatment of variable value is the same as that of financial satisfaction).

Interpersonal relationship variables include trust (this trust mainly refers to trust towards non-family members. The questionnaire question is: Can most people be trusted? Answer options: 1. Most people can be trusted, 2. It is better to be cautious), trust in your neighborhood (the answer option is the same as the family trust level mentioned above).

Emotional factors: Emotional factors are important factors that determine a person's subjective well-being. Combining the availability of literature and data, we choose the following three variables: loneliness (questionnaire question: Do you feel lonely or isolated from the masses? The answer options are: 1. no, 2. yes), positive emotion (questionnaire question: do you feel excited and interested, answer: 1. no, 2. yes), negative emotions (questionnaire question: do you feel frustrated and lost? 1. no, 2. yes).

Values: The importance of leisure time (the answer options are 1. Very important, 2.

Rather important, 3. not very important, 4. not at all important). Which is more important, Protecting environment or Economic growth? (The answer options are: 1. protecting the environment, 2. economic growth and creating jobs, and 3. another answer). Satisfaction with the political system (1-10 points are assigned, and higher scores indicate greater satisfaction). Importance of democracy (1-10 points are assigned, and higher scores indicate greater satisfaction). How proud of nationality (the answer options are: 1. very proud, 2. quite proud, 3. not very proud, 4. not at all proud). Income equality (1-10 points, 1 point means that the income should be absolutely equal, and 10 means that the income gap should be widened).

3.3.2 Comparison of subjective well-being among different groups

Comparing the subjective well-being of different groups can reveal the main factors that affect subjective well-being. Table 2 shows the differences between them. From a gender perspective, except for 2001, when women's subjective well-being was significantly higher than men's, there was no significant difference in other years. Overall, the average subjective well-being of women was 1.80 higher than men's, 1.67, indicating that women were generally happier than men. From the perspective of marital status, married people have the highest level of well-being, followed by unmarried people, and divorce and widowhood have the lowest levels, indicating that marriage can enhance well-being and divorce and widowhood are misfortunes in life. From the perspective of education level, subjective well-being also significantly increases with the improvement of education level, indicating that good education can make people happier. The reason may be that people with more education tend to have better jobs, good incomes, and social status, while those with good education are likelier to have the correct values.

In 2001, an abnormal situation occurred, with high or technical secondary school having the highest subjective well-being; the lowest level is a college degree or above. The possible reason is that at that time, the university was in a period of enrollment expansion, and university education was transformed from elite to mass education, which greatly frustrated the superiority complex of college students at that time and reduced their subjective well-being. From the perspective of health status, people with good health are happier than those with fair health, while those with fair health are happier than those with poor health, and the difference is pronounced. Health status is an important factor affecting a person's subjective well-being. From the perspective of work status, retired people have the highest subjective well-being, followed by those with jobs, and those without jobs have the lowest. This is consistent with Easterlin's conclusion, which aligns with the current situation. Retired people have relatively low pressure and are happy, while those without jobs have very high pressure, making it challenging to say well-being.

From the income perspective, the higher the income, the higher the subjective well-being, indicating that income still plays a vital role in subjective well-being. From the perspective of values, people who think leisure is essential have higher happiness than those who think leisure is unimportant. It should be noted that this phenomenon was not established in 1990, indicating that leisure had no significant impact on

happiness in the early days. From the perspective of the preference for environmental protection and economic growth, the residents who pay attention to environmental protection have a higher subjective well-being. In addition, the people who have a stronger sense of national pride have a higher subjective well-being. From the Chi-squared test results, except that gender has no significant impact on subjective well-being, other variables are significant. Further analysis is needed to determine the specific impact of each variable on subjective well-being.

Table2 Group differences in residents' SWB

Year	Category	1990	2001	2007	2018	1990-2018	chi-square test
Gender	Male	2.25	1.62	1.10	1.66	1.67	23.99
	Female	2.04	2.37	1.29	1.58	1.80	
Marital status	Unmarried	1.25	2.05	0.59	1.65	1.53	95.24***
	Married	2.39	1.93	1.36	1.66	1.80	
	Divorce or Widowed	2.17	2.54	-1.26	0.94	1.15	
Age	15-29	1.41	2.19	1.31	2.04	1.82	76.58**
	30-49	2.48	1.89	1.12	1.37	1.65	
	≥50	2.52	1.86	1.29	1.73	1.82	
Education level	Junior high school and below	---	1.71	1.13	1.03	1.28	128.46***
	High school or technical secondary school	---	2.19	1.26	2.11	1.90	
	College degree or above	---	2.42	1.06	2.95	2.44	
Health status	Good	2.78	2.52	2.06	2.67	2.53	689.06***
	Fair	1.47	1.21	0.25	0.64	0.93	
	Poor	0.70	-1.01	-0.99	-1.38	-1.04	
Work status	With job	2.25	1.92	1.33	1.70	1.80	97.92***
	Retired	2.16	2.80	1.23	1.91	2.14	
	Without jobs	1.43	1.90	0.39	1.19	1.24	
Absolute income	Low	2.28	-0.11	-0.13	0.35	0.92	309.54***
	Medium	1.91	2.45	1.19	2.60	2.18	
	High	1.53	3.88	2.07	3.88	2.73	
Relative income	Dissatisfied	0.52	-2.11	-1.63	-1.65	-1.41	2417.07***
	Just like	1.70	1.67	1.13	1.47	1.51	
	Satisfied	3.65	4.59	3.77	3.84	3.99	

Year	Category	1990	2001	2007	2018	1990-2018	chi-square test
Family trust	Trust completely	-	-	1.83	3.00	2.38	193.26***
	Trust somewhat	-	-	0.34	1.67	1.34	
	Do not trust very much	-	-	0.17	0.50	0.33	
	Do not trust at all	-	-	0.04	0.02	0.03	
Leisure time	Very important	1.80	1.93	2.62	3.13	2.56	417.93***
	Rather important	1.93	1.62	1.82	2.88	2.20	
	Not very important	2.38	0.98	1.43	2.45	1.84	
	Not at all important	2.35	-1.46	0.99	1.02	1.27	
Protecting environment or Economic growth	Protecting environment	-	1.48	2.02	2.86	2.32	178.782***
	Economic growth and creating jobs	-	0.76-	1.38	2.63	1.82	
	Other answers	-	0.75	2.13	2.66	2.06	
proud of nationality	Very proud	3.23	1.90	2.79	3.45	3.05	236.83***
	Quite proud	1.62	1.28	1.67	2.43	1.87	
	Not very proud	0.70	0.02	0.37	1.20	0.54	
	Not at all proud	0.13	0.23	0.27	0.86	0.16	

Note: The data in the table represents the mean, and the relationship between variables is tested using chi-square statistics. The superscripts ***, **, and * represent significant correlations between variables at 0.01, 0.05, and 0.1 significance levels.

The factors affecting subjective well-being are gradually changing with the continuous development of the economy and society. In recent years, the needs of the people for fairness, justice, democracy, freedom, environmental protection, and other aspects have gradually increased, and the performance of these aspects will also affect the level of subjective well-being. Figure 1 shows the changing attitudes of the Chinese people towards leisure, democracy, environmental protection, and national pride from 1990 to 2018. We have found that from 1990 to 2018, the Chinese people increasingly valued free leisure time. In choosing between environmental protection and economic growth, more and more people choose to protect the environment. The proportion of people who felt proud of their country gradually increased, and the proportion of people who believed democracy was very important increased from 20% in 2007 to nearly 40% in 2018. These data indicate that the Chinese people have gradually shifted their focus from basic living needs such as clothing, food, housing, and transportation to a greater emphasis on spiritual needs such as freedom, democracy, and confidence.

Figure 1 shows the changing attitudes of the Chinese people towards leisure, democracy, environmental protection, and national pride from 1990 to 2018.

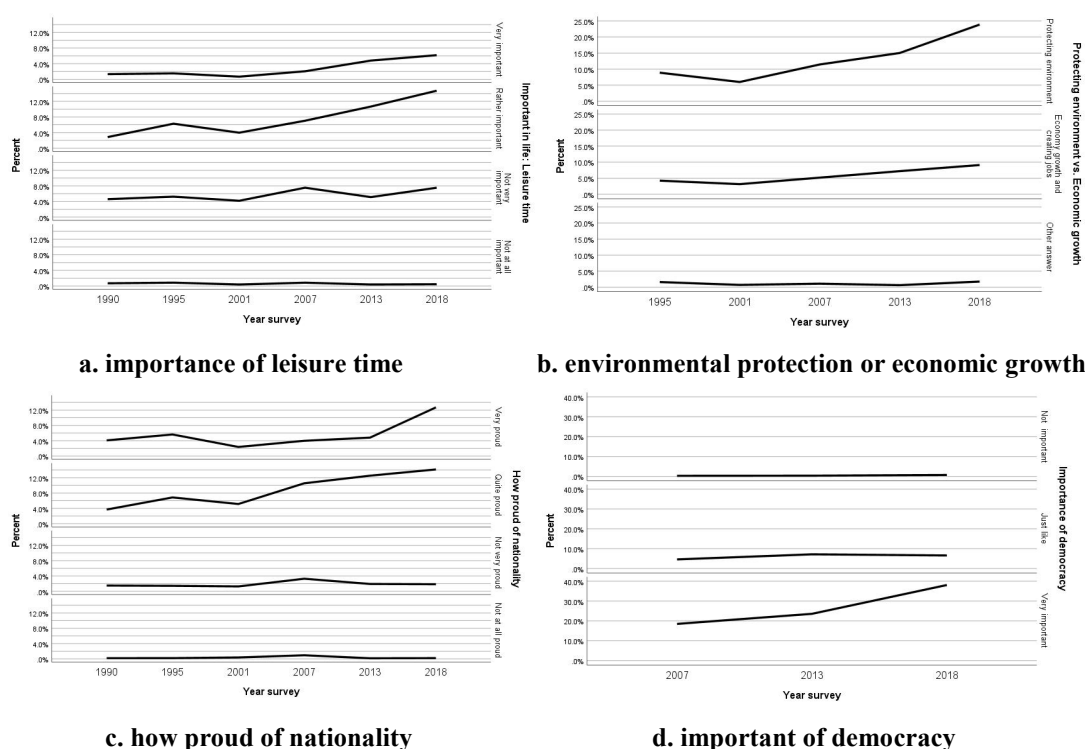


Figure1 Trends in the Changes of Chinese People's Perspectives from 1990 to 2018

3.4 Model Estimation

Since subjective well-being is an ordered Categorical variable, we choose the ordered logistic regression model as the benchmark:

$$\ln \frac{p(SWB_i \leq j)}{1 - p(SWB_i \leq j)} = \alpha_0 + \alpha_1 econ_i + \beta_1 nonecon_i + \varepsilon_i \quad (1)$$

where SWB is the dependent variable, representing the level of subjective well-being; α_0 is a constant term; $econ_i$ represents the vector of economic factors, $nonecon_i$ represents a vector of non-economic factors, the specific variables they contain have been explained earlier.

While some studies treat SWB measures as continuous and employ OLS regression (Ferrer-i-Carbonell & Frijters, 2004), we prefer Ordered Logit given that the SWB variable is derived from ordinal responses (1-10 and 1-4 scales). Importantly, Ferrer-i-Carbonell and Frijters (2004) demonstrated that assuming ordinality versus cardinality in SWB regressions makes little practical difference; the sign and significance of coefficients are generally robust across OLS and Ordered Logit specifications. Therefore, our choice of Ordered Logit does not compromise the validity of our findings. For cross-wave comparability, we report odds ratios in the regression tables. The Brant test confirms the proportional odds assumption for the main variables of interest ($p > 0.05$).

Table3 Ordered regression results

Year			1990	2007	2018
Influencing factor	Variable	Category	Estimated value	Estimated value	Estimated value
Demographic	Age	15-29	0.213 (1.24)	-0.137** (0.87)	-0.451*** (0.64)

Year			1990	2007	2018
Influencing factor	Variable	Category	Estimated value	Estimated value	Estimated value
characteristics		30-49	-0.163 (0.85)	-0.254** (0.78)	-0.513*** (0.60)
		≥50	control group		
	Gender	Female	0.103* (1.11)	0.164** (1.18)	0.254*** (1.29)
		Male	control group		
	Marital status	Unmarried	-0.016 (0.98)	0.045** (1.05)	0.076 (1.08)
		Married	0.426*** (1.53)	0.371** (1.45)	0.299** (1.35)
		Divorce or Widowed	control group		
	Health status	Good	0.532*** (1.70)	1.143*** (3.14)	1.937*** (6.94)
		Fair	0.221** (1.25)	0.658** (1.93)	0.983*** (2.67)
		Poor	control group		
	Education level	College degree or above	-	0.975*** (2.65)	0.486*** (1.63)
		High school or technical secondary school	-	0.769* (2.16)	0.246** (1.28)
		Junior high school and below	control group		
Economic factors	Income	High	0.182*** (1.20)	0.281*** (1.32)	0.340*** (1.40)
		Medium	0.226*** (1.25)	0.256*** (1.29)	0.459*** (1.58)
		Low	control group		
	Last year's savings situation	Save money	0.204*** (1.23)	0.322*** (1.38)	1.075*** (2.93)
		Just get by	0.104** (1.11)	0.247** (1.28)	0.578*** (1.78)
		Spent some savings and borrowed money	0.069* (1.07)	0.214*** (1.24)	0.577*** (1.78)
		Spent savings and borrowed money	Control group		
	Family financial satisfaction	Satisfaction	2.741*** (15.50)	3.421*** (30.60)	3.295*** (26.98)
		Moderate level	1.742*** (5.71)	1.911*** (6.76)	1.536*** (4.65)
		Dissatisfaction	Control group		
Work status	Job satisfaction	Satisfaction	0.468** (1.60)	1.357*** (3.88)	1.938*** (6.94)
		Moderate level	0.361 (1.43)	0.512** (1.67)	0.604*** (1.83)
		Dissatisfaction	Control group		

Year			1990	2007	2018
Influencing factor	Variable	Category	Estimated value	Estimated value	Estimated value
Family factor	Family trust	Trust completely	-	2.771*** (19.57)	4.089** (59.68)
		Trust somewhat	-	2.363*** (10.62)	3.605* (36.78)
		Do not trust very much	-	1.873** (6.51)	4.031** (56.32)
		Do not trust at all	Control group		
	Family life satisfaction	Satisfaction	1.132*** (3.10)	2.118*** (8.31)	2.396*** (10.98)
		Moderate level	0.745*** (2.11)	0.781*** (2.18)	0.975*** (2.65)
		Dissatisfaction	Control group		
Interpersonal relationship	Trust towards non-family members	Most people can be trusted	0.226* (1.25)	0.361*** (1.43)	0.351*** (1.42)
		It is better to be cautious	Control group		
Emotional factors	Lonely or isolated from the masses	No	0.015 (1.02)	0.261* (1.30)	0.331* (1.39)
		Yes	Control group		
	Excited and interested	Yes	0.227*** (1.25)	0.219*** (1.24)	0.498*** (1.65)
		No	Control group		
	Frustrated and lost	No	0.217*** (1.24)	0.383*** (1.47)	0.839*** (2.31)
		Yes	Control group		

Note: The superscripts ***, **, and * in the parameter estimate indicate significance at 1%, 5%, and 10% levels of significance.

The link function is logit. The odds ratio estimates are in parentheses. Due to space constraints, only the data results for three years are listed here.

From Table 3, the ordered dependent variable model's conclusions generally support the statistics' results described in section 3.3.2. Women are likelier to be happy than men, and the subjective well-being of the group with high income, high education, good health, marriage, trust in family, trust in society, high job satisfaction, and an optimistic attitude is generally higher. Therefore, it also confirms the conclusion of the hypothesis in this article. Notably, from the perspective of age, the conclusion of descriptive statistics is that there is a U-shaped relationship between age and subjective well-being. This section shows that the group over 50 has the highest level of well-being, and both parts reveal the conclusion that the group over 50 is happier. The group over 50 belongs to the group approaching retirement or even having retired (the legal retirement age was 50 years old in 1990 and 60 years old in 2018). Combined with the development status of China in recent years, it is easy to find that the group with the greatest pressure in China is 30-49 years old. They usually bear the pressure of housing loans, parents, and children, and can only give up leisure and entertainment to work hard in order to earn more income. However, most of the people over the age of 50 belong to the stage of enjoying life. There is no economic pressure at this time, and they can spend more time on what they are interested in. The regression coefficients of the respective

variables vary across different years, and this variation pattern will be explored in detail in Section 4.

4.The dynamic process of influencing factors of SWB

In Section 3, we have analyzed the impact of economic, non-economic, values, and other factors on subjective well-being in detail. In the past 30 years, has the importance of these factors on subjective well-being changed? If so, what are the patterns of change? This section will discuss this issue.

In order to determine which independent variable is more important to the dependent variable, variance analysis, standardized regression coefficient, decision tree, and other methods can be used for analysis. However, our variables are almost all classified variables, and the standardized regression coefficient makes it challenging to achieve the goal. Therefore, this section uses variance analysis and the decision tree method to analyze the importance of the influence of independent variables on dependent variables in different years (Due to the lack of some data, the information for 1990 is omitted here) to judge the change process of the influencing factors of subjective well-being.

Table4 Covariance analysis table

Year	1995	2001	2007	2013	2018
Independent variable	F statistic	F statistic	F statistic	F statistic	F statistic
Absolute income	378.22***	142.237***	115.342***	36.248***	4.254**
Relative income	78.25***	119.513***	131.912***	155.035***	181.351***
Job satisfaction	18.431***	22.751***	23.659***	22.761***	25.104***
Family trust	-	-	6.908***	5.673***	10.921***
Interpersonal relationship	4.288**	6.742**	17.896***	20.057***	6.009**
Emotional factors	1.364	2.215	6.221**	15.217***	24.136***
Leisure time	-	-	1.204	3.256**	31.227***
Protecting environment or economic growth	1.304	5.962**	6.295**	6.347**	14.801***
Proud of nationality	27.423***	11.174***	32.469***	42.849***	43.491***
Importance of democracy	-	-	0.757	0.807	2.421**
Income equality	1.023	3.132*	3.326*	5.247**	23.439***
Population characteristics	Control	Control	Control	Control	Control

Note: The data in the table are the values of F statistics under the control of demographic characteristics (gender, age, education level, health, et al.)The superscripts ***, **, * in the F statistic indicate significance at 1%, 5%, and 10% levels of significance.

It can be seen from Table 4 that in the early stage (1995-2001), the F statistic value of absolute income was much larger than other variables, indicating that at this stage, absolute income was the most important factor associated with subjective well-being. Relative income and pride in the country were also very important, while environmental protection, income equity, emotion, and other factors had no significant impact on subjective well-being. Since 2007, relative income gradually became the most important factor associated with subjective well-being. At this stage, absolute income is still very important, occupying the second important position. National pride and job satisfaction are closely followed, while democracy and leisure factors are insignificant. From 2013 to 2018, relative income continued to be the most important factor affecting subjective well-being; the importance of absolute

income gradually decreased, and the importance of national pride, leisure, job satisfaction, emotional factors, income equity, democracy, and other factors gradually increased. Therefore, with the continuous development of the economy and society, income gradually increases, and its impact on happiness gradually decreases. In contrast, the importance of relative income, democracy, freedom, fairness, emotion, and other spiritual factors gradually increases, broadly consistent with the theoretical expectations derived from Maslow's hierarchy of needs theory.

Table5 Importance of independent variables

Year	1995	2001	2007	2013	2018
Independent variables	Importance	Importance	Importance	Importance	Importance
Absolute income	4.771 (100%)	3.837 (100%)	0.284 (7.3%)	0.199 (8.5%)	0.059 (2.0%)
Relative income	0.27 (5.7%)	0.242 (6.3%)	3.902 (100%)	2.33 (100%)	2.89 (100%)
Job satisfaction	0.002 (0.0%)	0.006 (0.2%)	0.028 (0.7%)	0.035 (1.5%)	0.047 (1.6%)
Family trust	-	-	0.131 (3.3%)	0.122 (5.2%)	0.167 (5.8%)
Interpersonal relationship	0.000 (0.0%)	0.000 (0.0%)	0.018 (0.5%)	0.019 (0.8%)	0.025 (0.9%)
Emotional factors	0.000 (0.0%)	0.012 (0.3%)	0.021 (0.5%)	0.019 (0.8%)	0.032 (1.1%)
Leisure time	-	-	0.061 (1.6%)	0.072 (3.1%)	0.142 (4.9%)
Protecting environment or economic growth	0.006 (0.1%)	0.000 (0.0%)	0.015 (0.4%)	0.02 (0.94%)	0.044 (1.5%)
Proud of nationality	0.156 (3.3%)	0.180 (4.7%)	0.51 (13.2%)	0.202 (8.6%)	0.229 (7.9%)
Income equality	0.007 (0.1%)	0.000 (0.0%)	0.005 (0.1%)	0.078 (3.3%)	0.131 (4.5%)
Importance of democracy	-	-	0.023 (0.6%)	0.09 (3.9%)	0.138 (4.8%)

Note: The data in the table are absolute and relative importance indicators of decision trees. The larger the value, the higher the percentage, indicating that the factor is more important.

At the same time, we use the decision tree model to analyze the importance of the factors influencing subjective well-being. It can be seen from Table 5 that absolute income occupied the most important position in 1995 and 2001, and from 2007 to 2018, relative income became the most important factor affecting subjective well-being, which was consistent with the above covariance analysis results. Notably, the importance of absolute income in 2018 dropped to eighth place. From the perspective of non-economic factors, the impact of national pride on subjective well-being has always been prominent, so we can see a profound patriotism in the Chinese people. Although the importance of other factors is not entirely consistent with the results of covariance analysis, the overall development trend is consistent. With the continuous improvement of people's income level, people pay more attention to relative status. The performance of fairness, justice, democracy, trust, leisure, environmental protection, interpersonal relations, and other aspects, and the impact of these factors on subjective well-being, is gradually increasing; these conclusions also confirm the conclusion of hypothesis 7 in this article.

In addition to the variance analysis and decision tree methods reported above, we employ Shapley value decomposition (Shapley, 1953; Israeli, 2007) as a supplementary approach to assess variable importance. This method partitions the model's pseudo- R^2 into contributions from each independent variable, accounting for correlations among predictors. The Shapley decomposition results, presented in Table 6, are largely consistent with the F-statistic and decision tree findings, confirming the robustness of our conclusions regarding the changing importance of different SWB determinants.

Table6 Shapley Value Decomposition: Percentage Contribution to Pseudo-R² (Selected Years)

Independent Variable	1995	2001	2007	2013	2018
Absolute Income	41.2%	33.8%	17.5%	11.8%	7.8%
Relative Income	8.5%	12.8%	28.2%	35.5%	39.2%
Job Satisfaction	4.3%	6.0%	7.4%	8.3%	8.6%
Family Life Satisfaction	12.8%	13.5%	14.2%	13.9%	14.3%
Proud of Nationality	8.8%	9.9%	11.3%	10.6%	10.2%
Emotional Factors	1.9%	2.6%	4.3%	5.2%	5.9%
Health Status	8.7%	6.9%	6.3%	5.9%	5.3%
Other Controls	13.8%	14.5%	10.8%	8.8%	8.7%

Note: "Other Controls" includes gender, age, marital status, education, savings, and generalized trust. Percentages may not sum to 100% due to rounding.

5. Robust Test

In order to test the robustness of the research results, we used the method of replacing dependent and independent variables to test again. The surrogate variables of dependent variables are happiness score and life satisfaction, respectively, and the question of happiness score is "On the whole, are you feeling happy? "The option answer is" 1. Very happy, 2. quiet happy, 3. not very happy, 4. not at all happy "(the lower the value, the more happy); the question of life satisfaction is" Overall, are you satisfied with your life? "The answer is from 1 (dissatisfied) to 10 (satisfied) to describe the satisfaction (the higher the value, the more satisfied the life). We used the method of replacing the relative income index for the test. Here, we measure the subjective income grade. The questionnaire question is "What do you think is the income level?" The answer to the scale of income is 1 to 11. 1 represents the lowest level, and 11 represents the highest level. We merged it into three categories: 1-3 into the low-income grade, 4-8 into the middle-income grade, and 9-11 into the high-income grade.

We regard happiness score as an ordered dependent variable and life satisfaction as a continuous dependent variable. In order to save space, the regression parameters of control variables, such as demographic characteristics, will not be listed here.

It can be seen from Table 7 that when we change the dependent variables, whether it is happiness score or life satisfaction, the main variables still maintain a conclusion similar to that in Table 3. However, the parameter size is slightly different, indicating that our research conclusion is stable. The explanatory variable we replaced is subjective income grade, and its coefficients are all positive, indicating that the higher the relative income, the higher the subjective well-being level.

Table7 Robust Test

Year	1990		2007		2018	
Variable	Happines s	Life satisfaction	Happiness	Life satisfaction	Happiness	Life satisfaction

Income	High	0.221***	1.022**	0.291***	2.951***	0.283***	1.527***
	Medium	0.134***	0.542	0.238***	1.341***	0.199**	0.813*
	Low	Control group					
Savings	Save money	0.174***	1.032***	0.221***	1.422**	0.423***	1.337**
	Just get by	0.102**	0.672**	0.184**	1.042*	0.291***	0.825**
	Spent some savings and Borrowed	0.065	0.472	0.082*	0.628*	0.175*	0.662**
	Spent savings and borrowed	Control group					
Family financial satisfaction	Satisfaction	2.524***	2.236***	2.782***	2.548***	2.521***	3.745***
	Moderate level	1.788***	1.935***	2.036***	2.072***	2.227***	2.963***
	Dissatisfaction	Control group					
Subjective income grade	High-income	2.663***	2.481***	2.533***	2.429***	2.733***	3.557***
	Middle-income	1.355***	2.042***	1.954***	1.892***	2.169***	3.022***
	Low-income	Control group					
Job satisfaction	Satisfaction	0.525	1.043	1.284***	2.053***	2.278***	2.236***
	Moderate level	0.227	0.364	0.672***	1.179***	1.047***	1.681***
	Dissatisfaction	Control group					
Family trust	Trust completely	-	-	3.225***	3.261***	3.825***	2.945***
	Trust somewhat	-	-	1.514***	2.149***	3.154***	2.082***
	Do not trust very much	-	-	1.337***	1.157***	3.082***	1.437***
	Do not trust at all	Control group					
Family life satisfaction	Satisfaction	1.153***	1.484***	1.932***	2.247***	2.227***	2.519***
	Moderate level	0.579***	1.023***	0.908***	1.378***	1.134***	1.658***
	Dissatisfaction	Control group					
Trust towards non-family members	Most people can be trusted	0.338*	1.783**	0.523***	2.024***	0.854***	2.437***
	It is better to be cautious	Control group					
Lonely or isolated from the masses	No	0.022	1.331	0.176*	1.407	0.154*	1.107
	Yes	Control group					
Excited and interested	Yes	0.337***	1.672***	0.358***	1.773***	0.551***	2.268***
	No	Control group					
Frustrated and lost	No	0.202*	1.083*	0.427***	1.392***	0.925***	2.557***
	Yes	Control group					

Note: The superscripts ***, **, and * in the parameter estimate indicate significance at 1%, 5%, and 10% levels of significance.

At the same time, we found that in 1990, the impact of absolute income, savings, job satisfaction, emotional perception, and other aspects on subjective well-being was not very obvious, but by 2018, the impact of these factors increased significantly. Considering China's national conditions at that time, it is easy to understand this. In 1990, China was still in relative poverty, and the influence of the planned economy era was still widespread. At that stage, people's income gap was insignificant, their life, work, consumption, and other behavior patterns were similar, and their emotional fluctuations were insignificant. By 2018, the gap between the rich and the poor was increasing, and people's behavior patterns had a big gap. Therefore, the impact of these factors on subjective well-being also gradually increased.

6. Heterogeneity test

It is important to clarify that the Easterlin paradox (Easterlin, 1974) concerns whether average happiness rises with long-term economic growth at the national level. Our study, using individual-level repeated cross-sectional data, is not designed to directly test this proposition. What we can examine is how the individual-level associations between various factors and SWB have changed over time. The finding that absolute income remains positively associated with SWB at the individual level does not refute the Easterlin paradox; it is entirely consistent with the paradox's underlying logic, which acknowledges that richer individuals tend to be happier than poorer individuals within a given society, even as aggregate happiness may not rise with overall economic growth (Easterlin, 2001). Our results are consistent with the mechanisms that could explain the paradox—namely, that social comparisons become more salient as incomes rise, potentially offsetting the positive effects of aggregate income growth on average SWB. Next, we further explore the differences among different income groups, divided into three groups according to absolute income, namely low, medium, and high, to explore the influencing factors of subjective well-being. Here, we use the decision tree to analyze the importance of the factors influencing subjective well-being.

Income groups are constructed based on respondents' self-reported household income on a 1-10 scale in the WVS questionnaire. Following the approach of Knight et al. (2009) and Luo (2009), we divide the sample into three groups: low-income (1-3), medium-income (4-7), and high-income (8-10). This categorization follows the original questionnaire scale rather than quantile grouping, ensuring consistency across survey waves. Sample sizes for each income group by year are: 1995: low=425, medium=812, high=263; 2001: low=380, medium=485, high=135; 2007: low=685, medium=1025, high=281; 2013: low=820, medium=1180, high=300; 2018: low=985, medium=1628, high=423.

Table 8² Reveals significant differences in the impact of various factors on subjective well-being among different income groups. Specifically, for the high-income group, absolute income does not dominate their subjective well-being, ranking second in 1995, ninth in 2007, and tenth in 2018. In contrast, relative income, job satisfaction, and leisure time factors are seen as more crucial.

In the middle-income group, absolute income was the primary factor influencing subjective well-being in 1995 and 2007 and remains second only to relative income in 2018. The importance of relative income in the middle-income group cannot be ignored, as it jumped from second place in 1995 and 2007 to first

²The upper right corner of the values in Table 8 indicates the importance ranking.

place in 2018. This indicates that income is still the core factor determining their subjective well-being. As for the low-income group, absolute income remained the primary factor in all examination years (1995, 2007, and 2018), indicating a high dependence and sensitivity of the low-income group to income. At the same time, although relative income fluctuates slightly in importance, it remains stable in the top three, especially the issue of income equity, which has constantly been closely monitored by low-income groups and ranks in the top three. This further confirms the extreme importance of income factors for this group.

In summary, income is the primary determinant of subjective well-being for middle-income and low-income groups. This finding highlights income's core position in Chinese society. It indirectly reflects that the overall economic level still needs to be improved, and the general public is facing economic pressure.

Our heterogeneity findings are consistent with recent studies examining income-stratified SWB determinants in China. Knight and Gunatilaka (2022) found that perceptions of inequality have a greater effect on happiness than actual inequality, and that fairness perceptions ameliorate the adverse effects for the poorest groups. Similarly, Liu et al. (2024) demonstrated that the adoption of new technologies improves SWB among farmers primarily through income effects for low-income households, but through leisure time and reduced workload effects for higher-income households. These patterns align with our finding that low-income groups remain more dependent on absolute income, while high-income groups place greater emphasis on non-economic factors.

Table8 Importance of independent variables grouped by income

Year	1995			2007			2018		
	High	Medium	Low	High	Medium	Low	High	Medium	Low
Absolute income	0.381 ^[2] (15.5%))	2.816 ^[1] (100%))	4.156 ^[1] (100%))	0.025 ^[9] (1.1%))	3.054 ^[1] (100%))	4.338 ^[1] (100%))	0.017 ^[10] (0.8%))	1.024 ^[2] (37.1%))	4.229 ^[1] (100%))
Relative income	0.273 ^[3] (11.1%))	0.142 ^[2] (5.0%))	0.837 ^[2] (20.1%))	2.178 ^[1] (100%))	1.142 ^[2] (37.4%))	0.933 ^[2] (21.5%))	2.263 ^[1] (100%))	2.759 ^[1] (100%))	0.845 ^[3] (20.0%))
Job satisfaction	2.452 ^[1] (100%))	0.016 ^[5] (0.6%))	0.012 ^[6] (0.3%))	0.355 ^[3] (16.3%))	0.156 ^[5] (5.1%))	0.047 ^[6] (1.1%))	0.206 ^[4] (9.1%))	0.132 ^[6] (4.9%))	0.396 ^[4] (9.4%))
Family trust	-	-	-	0.253 ^[5] (11.6%))	0.106 ^[7] (3.5%))	0.227 ^[4] (5.2%))	0.195 ^[6] (8.6%))	0.086 ^[9] (3.1%))	0.354 ^[5] (8.4%))
Interpersonal relationship	0.108 ^[5] (4.4%))	0.032 ^[4] (1.1%))	0.000 ^[7] (0.0%))	0.348 ^[4] (16.0%))	0.055 ^[8] (1.8%))	0.012 ^[10] (0.3%))	0.325 ^[3] (14.4%))	0.122 ^[7] (4.4%))	0.020 ^[9] (0.5%))
Emotional factors	0.032 ^[6] (1.3%))	0.012 ^[6] (0.4%))	0.024 ^[4] (0.6%))	0.232 ^[6] (10.7%))	0.053 ^[9] (1.7%))	0.018 ^[9] (0.4%))	0.174 ^[7] (7.7%))	0.024 ^[10] (0.9%))	0.019 ^[10] (0.4%))

Leisure time	-	-	-	0.412 ^[2] (18.9%)	0.154 ^[6] (5.0%)	0.133 ^[5] (3.1%)	0.377 ^[2] (16.7%)	0.336 ^[3] (12.2%)	0.148 ^[6] (3.5%)
Protecting environment or economic growth	0.006 ^[7] (0.24%)	0.000 ^[8] (0.0%)	0.000 ^[8] (0.0%)	0.003 ^[10] (0.1%)	0.000 ^[11] (0.0%)	0.000 ^[11] (0.0%)	0.011 ^[11] (0.5%)	0.001 ^[11] (0.0%)	0.003 ^[11] (0.1%)
Proud of nationality	0.122 ^[4] (5.0%)	0.103 ^[3] (3.7%)	0.022 ^[5] (0.5%)	0.145 ^[8] (6.7%)	0.328 ^[3] (10.7%)	0.032 ^[8] (0.7%)	0.106 ^[8] (4.7%)	0.206 ^[4] (7.5%)	0.027 ^[8] (0.6%)
Income equality	0.001 ^[8] (0.00%)	0.001 ^[7] (0.0%)	0.522 ^[3] (12.6%)	0.002 ^[11] (0.1%)	0.271 ^[4] (8.9%)	0.889 ^[3] (20.5%)	0.023 ^[9] (1.0%)	0.192 ^[5] (7.0%)	0.932 ^[2] (22.0%)
Importance of democracy	-	-	-	0.151 ^[7] (6.9%)	0.043 ^[10] (1.4%)	0.043 ^[7] (1.0%)	0.203 ^[5] (9.0%)	0.096 ^[8] (3.5%)	0.052 ^[7] (1.2%)

7 Conclusion and Discussion

7.1 Main conclusions

This study systematically analyzes the dynamic evolution of the influencing factors of subjective well-being and its relative importance in different historical stages. The research scope covers various dimensions: demographic characteristics, economic status (absolute and relative income, savings), occupational status, emotional dimension, social equity, democratic perception, leisure activities, and environmental protection awareness. After nearly three decades of follow-up observation, we found that the influencing factors of SWB showed significant time-varying. Specifically, in the early 1990s, that is, under the background of relative poverty, absolute income, as the cornerstone of ensuring basic survival needs, made the most significant contribution to SWB, reflecting the primary concern of the people in the era of material scarcity. However, with the progress of the times, after entering the 2010s, the importance of relative income has gradually become prominent, while the influence of absolute income tends to weaken. At the same time, non-economic factors such as national pride, social justice, democratic experience, and emotional health have significantly increased to be the key factors affecting SWB. This trend has also been strongly supported by decision tree analysis, and these conclusions support the hypothesis in this article.

Further, from the heterogeneity perspective, the study reveals the differences in SWB influencing factors among different economic classes. Although absolute income still impacts high-income groups, it is no longer the dominant factor. Factors such as relative income, job satisfaction, and leisure time have become critical factors that affect their SWB. On the contrary, absolute income has always played a pivotal role and is an indispensable cornerstone for improving SWB for middle-income and low-income groups.

Finally, to ensure the robustness and reliability of the research conclusion, this study adopted the variable

substitution strategy to carry out the substitution test on the main independent and dependent variables. The results show that the conclusions are highly consistent with the previous analysis, which strongly verifies the dynamic change model of SWB influencing factors proposed in this study and its differential performance in different social groups and provides a solid theoretical and empirical basis for understanding and improving public well-being.

The research conclusion provides an important reference for the government to formulate policies to enhance the public's subjective well-being (SWB). The government should recognize that the factors affecting SWB vary significantly over time in different historical periods. It should provide targeted policies to enhance public happiness at different stages or among different economic strata.

In economically underdeveloped regions, absolute income, as the foundation for ensuring basic survival needs, contributes the most to SWB. Therefore, the government should focus on improving the basic living security of the entire population in these regions and reducing poverty through economic growth and poverty alleviation policies. For relatively developed regions, the importance of relative income gradually emerges, and the impact of absolute income tends to weaken. This means that when formulating economic policies, the government should not only pay attention to economic growth and the improvement of absolute income but also focus on the fairness of income distribution, narrow the gap between the rich and the poor, and reduce the negative impact of social inequality. In addition, non-economic factors such as national pride, social justice, democratic experience, and emotional health have significantly increased their impact on SWB, becoming key factors affecting public happiness. Therefore, the government should strengthen social construction, improve public services, promote fairness and justice, strengthen democratic construction, and pay attention to public mental health. By increasing leisure and entertainment facilities and improving environmental quality, the government can enhance the overall happiness of the public.

For different economic strata, the government should adopt differentiated policies. Although absolute income still impacts high-income groups, it is no longer the dominant factor. The government should pay more attention to their relative income, job satisfaction, and leisure time and further enhance their happiness by optimizing the tax system, providing high-quality public services, and promoting work-life balance. For low- and middle-income groups, absolute income is still an indispensable foundation for improving SWB. The government should continue implementing poverty alleviation policies, raise the minimum wage standard, improve the social security system, and ensure their basic living needs are met.

7.2 limitations

Several limitations should be acknowledged. First, the repeated cross-sectional nature of the WVS data means that we can identify changes in population-level associations across different survey waves, but we cannot draw causal conclusions about individual-level changes over time. Second, the self-reported measures of well-being are subject to well-known biases, including social desirability and mood effects. Third, while our analysis controls for a wide range of factors, unobserved confounding cannot be ruled out. Fourth, some variables (e.g., family trust, importance of democracy) are only available in later waves, limiting our ability to assess their importance over the full study period. Fifth, our measure of relative income-while based on established approaches in the literature-is an approximation, and future research with more detailed reference-group information would be valuable.

7.3 A Note on the Easterlin Paradox

As discussed in Section 6, it is important to clarify what our findings do and do not say about the Easterlin paradox. The Easterlin paradox concerns whether average happiness rises with long-term economic growth at the national level (Easterlin, 1974). Our study, using individual-level repeated cross-sectional data, is not designed to directly test this proposition. What we can conclude is that the individual-level association between absolute income and SWB, while positive, has weakened over time, while the role of relative income has grown. These micro-level findings are consistent with the mechanisms that could explain the paradox—namely, that social comparisons become more salient as incomes rise, potentially offsetting the positive effects of aggregate income growth on average SWB (Easterlin, 2001; Clark et al., 2008).

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Data Availability

The data supporting the findings of this study are accessible through the Corresponding Author. However, access to these data is restricted as they were utilized under license for this specific study and are therefore not publicly available. Nonetheless, the data can be obtained from the authors upon reasonable request, subject to permission from WVS.

Author contributions

The first author conducted data collection and curation, performed the literature review, and developed the statistical models. The second author (Corresponding author) conceptualized the study, designed and created the figures and tables, and drafted the conclusion. Both authors jointly reviewed and edited the manuscript. This work was supported by the *****Research Project.

Competing interests

The author declares no competing interests.

Ethical approval

This article is based on publicly available textual data, and does not contain any studies with human participants.

Informed consent

This article does not contain any studies with human participants.