



**UNIVERSITY OF GOTHENBURG**  
**SCHOOL OF BUSINESS, ECONOMICS AND LAW**

**Income, Insurance, and Happiness in China:  
Evidence from CHIP2013**

Yanni Shen  
gusyannsh@student.gu.se  
M.Sc. Economics  
Supervisor: Alpaslan Akay

# Abstract

By using the data from China Household Income Project 2013 (CHIP2013), an empirical analysis is made on the relationship among income, insurance and subjectively reported well-being (SWB) of Chinese people. The ordered logit model estimates suggest that both income and insurances relate to SWB positively. Specifically, except medical insurance, the four social insurance types, i.e., pension, work injury, unemployment, and maternity insurance, are positively associated with SWB while the work injury insurance is more prominent on SWB. Our results suggest that the insurances are statistically significant independent of allowing for actual absolute and relative income. There is also a substantive heterogeneity with respect to socioeconomic groups including rural, urban and immigrants from rural regions. The relationship between insurance and SWB is the weakest among the rural, followed by the migrants, then urban residents, as expected. The coefficient of insurance on SWB of high-income individuals is the largest especially for the work injury insurance while the coefficient of maternity insurance of SWB is the largest among the low-income people's.

There is a distinct difference between the employed and self-employed workers that employed workers concern more on work-related insurance while self-employed people care most about pension insurance. These findings suggest that insurance policies targeted at different groups can be made to raise national happiness. The paper discusses on the implications of our results with respect to welfare and insurance policies.

**Keywords:** Subjective Well-being, Income, Insurance, Ordered Logit Model

# Contents

1. Introduction.....	3
2. Literature Review .....	5
3. Data and Methodology.....	8
3.1 Data.....	8
3.2 Methodology.....	12
4. Results and Analysis .....	14
4.1 The relationship between income/insurnce and happiness.....	14
4.2 The relationship between income, insurance and happiness .....	16
4.3 Heterogeneity.....	18
4.3.1 Addressing heterogeneity on area groups.....	18
4.3.2 Addressing heterogeneity on income groups.....	21
4.3.3 Addressing heterogeneity on employment groups .....	22
4.4 Robustness Check.....	27
5. Conclusions.....	31
References.....	34
Appendix.....	37

# 1. Introduction

Compared with Warner Wilson's conclusion in 1967 that a happy person would be a "young, healthy, well-educated, well-paid, extroverted, optimistic, worry-free, religious, married person with high self-esteem, job morale, modest aspirations, of either sex and of a wide range of intelligence", tremendous progress has been made on the study of subjective well-being (SWB) in the recent five decades. Researchers now focus more on exploring the cause and effect of happiness instead of simply describing the demographics of happy people. With the rapid development of China's economy, researchers are becoming increasingly interested in the subjective well-being of Chinese people. In view of China's huge population, it is worthwhile and significant to investigate the factors influencing Chinese people's happiness.

Happiness is a very complex feeling that can be jointly affected by a lot of elements. To make it simple, we consider a person with a high level of subjective well-being is satisfied with the present life and hopeful about the future. Despite a quite satisfactory current conditions, a person having a bleak or uncertain future may find it difficult to be happy. In addition, a poor person would not be happy about the present life even knowing that a bright future is out there. Most of the mid aged Chinese people will make plans about the future because traditionally when in the old age, they will help their children in such as sharing burden for rising house prices. Therefore, factors reflecting both present and future living conditions should be considered for investigating the cause of Chinese people's subjective well-being.

Income, which includes absolute income and relative income, has been widely used to measure people's satisfaction about their current conditions. It is widely believed that absolute income seems to be positively correlated with subjective well-being, namely, the more a person earns, the happier he or she will be (Clark et al., 2008; Graham et al., 2004). However, Easterlin proposed the paradoxical relationship between absolute income and happiness, increased income does not necessarily boost the subjective well-being of high-income and low-income groups, which is possibly because that the

positive effect of income growth on happiness has been undermined by the along growing material aspirations. However, absolute income is not easily compared among people because of their regional and occupational differences. Therefore, relative income emphasizing the income of a person relative to that of people around him or her is another indicator of measuring income.

The indicators for future life expectations seem difficult to determine as there is no such thing that can represent the uncertain future. However, one thing can reduce the risk of future uncertainties: insurance. Although insurance can not represent whole future life expectations, insurance is capable to provide a less risky future. Particularly, unlike European countries, China's insurance system is not robust enough to cover all Chinese citizens. Generally, companies will be responsible for paying all or a percentage of insurance cost for their employees. Unfortunately, migrant workers and self-employed people have to undertake all insurance costs on their own, which is why not all Chinese people are insured. There are five basic social insurances in China: pension insurance, medical insurance, unemployment insurance, work injury insurance and maternity insurance. People who are fully insured will have better future expectations than those who are not insured at all, thus possibly resulting in the difference in their subjective well-being on the present life.

Therefore, the purpose of this thesis is to study the potential impact of income and insurance on Chinese people's subjective well-being by empirically analyzing data from China Household Income Project 2013 (CHIP2013). Specifically, this thesis aims to answer the following three questions: (1) How do income and insurance respectively affect subjective well-being? (2) How do income and insurance jointly affect subjective well-being? (3) Do such effects vary among different groups of people? The effects of income and insurance on subjective well-being are estimated through ordered logit regression in this thesis. There are six variables for insurance including five dummies and one numerical variable (number of insurances). The dummies indicate the coverage of five basic insurances (medical insurance, pension insurance, work injury insurance, unemployment insurance, and maternity insurance) and the numerical variable indicates how many kinds of insurances has an individual joined. Therefore, this thesis

also investigates the effects of different insurances on happiness. Additionally, the difference in the effect of insurances on socioeconomic groups is also examined through regression analysis on different groups.

The results of this thesis can be summarized as follows. Firstly, income is proved to be correlated with insurance by comparing the regression results of the model only containing income or insurance variable and that of the model containing both income and insurance variables. Therefore, it is necessary to consider income variable for investigating the effect of insurance, which, otherwise, will be exaggerated. Secondly, both absolute and relative income have a significant positive effect on subjective well-being as expected. Except for medical insurance, the other four insurances, i.e., pension, work injury, unemployment and maternity insurance, are positively associated with subjective well-being independent of allowing for income, among which the work injury insurance is more prominent on SWB. Finally, according to the regression results of three regional groups (migrant, rural and urban), two income groups (low income and high income) and the group of the employed and the self-employed, heterogeneity with respect to socioeconomic groups is proved. Urban residents are more likely to be aware of the importance of insurance than migrant workers and rural residents. The coefficient of insurance on SWB of high-income individuals is the largest especially for the work injury insurance while the coefficient of maternity insurance of SWB is the largest among the low-income people's. Furthermore, there is a distinct difference between the employed and self-employed workers that employed workers concern more on work-related insurance while self-employed people care most about pension insurance.

## **2. Literature Review**

Diener et al. (1999) conclude a comprehensive review of the studies in the field of subjective well-being and suggest that the next step is to “comprehend the interaction of psychological factors with life circumstances in producing SWB” to more

thoroughly understand happiness and develop theories. Chen and Davey (2008) sort out and give a clear list of SWB-related papers that have been published nationwide in Chinese language journals. They also point out some issues in the studies to date such as limitations in research regions and provide some recommendations for future research.

In 1974 Easterlin first put forward the famous “Easterlin Paradox” that although happiness is affected by income at a specific time point, over time subjective well-being does not trend upward as income continues to grow. Furthermore, in 2001 Easterlin posited that SWB is not only associated with income but also the material aspirations. He argued that aspirations grow along with income over the life cycle and thus undercut the positive effect of income on happiness. As a result, income growth does not necessarily cause SWB to increase for either lower- or higher-income groups as the negative effect of their growing material aspirations cancels out the positive effect of income growth. In fact, Easterlin et al. (2012) look into the trend of SWB in China from 1990 to 2010. They find out that there is a decline in life satisfaction from 1990 to around 2000-2005 and then a boost until 2010, resulting in the same U-shaped SWB curve as transition countries in central and eastern Europe. Although per capita consumption in China has increased at least fourfold during these two decades, there is no obvious improvement in Chinese people’s well-being. The authors also warn that along with the increasingly unequal income between the extremely rich and the extremely poor, the differences between their well-being are also becoming larger and larger. On the contrary, Stevenson and Wolfers (2013) demonstrates that the relationship between absolute income and SWB is roughly linear-log and does not diminish as income grows. They argued there is no evidence of the existence of such a satiation point after analyzing rich and poor countries, and rich and poor people within the same country.

Akay et al. (2012) show the effect of relative income of other worker groups on Chinese rural-to-urban migrants’ SWB, rural-to-urban migrants being those who were born in rural areas and now work in urban cities. The research find that the income of

other migrants and workers who remain in the hometown has a negative status effect<sup>1</sup> on migrants' well-being. On the other hand, urban workers' income has a significant and positive signal effect<sup>2</sup> on migrants' SWB as the migrants treat the surrounding urban residents' higher income as a signal for their future income. When the heterogeneity within the migrants is further examined, it turns out that these effects are distinctly strong for those migrants who want to stay and settle down in urban areas. Mo and Tang (2016) focus on the relationship between income and happiness in China, and their research shows that people's SWB increases as income rises. However, the marginal effect decreases. Also, the impact of the income level and the income gap on SWB is different for different income groups and rural and urban areas.

There are also works of literature on the relationship between SWB and insurance. Among the studies on happiness and insurance, Sjöberg (2010) highlights the positive effect of unemployment insurance on SWB because it can reduce concerns about future financial insecurity. The author also find out that unemployment insurance not only affects unemployed individuals' SWB but also the well-being of the employed. Although employed workers may not use unemployment insurance throughout their whole lives, the mere knowledge of the availability of unemployment insurance seems to contribute to their SWB. Zhang and Tan (2018) investigate the effect of social insurance on SWB in China. They find out that all five kinds of social insurances can positively affect national well-being but the effect of unemployment insurance and maternity insurance is not as significant as that of the other three. They also revealed the different value attitudes towards insurance in different income groups: urban residents attach more importance to the coverage of insurance while rural residents place greater emphasis on the universal social insurance. Fang and Sakellariou (2016) also show a positive relationship between pension insurance and Chinese migrants' SWB. They also prove the status effect on migrants when they are compared with other

---

<sup>1</sup> Status effects: the income of a reference group can negatively affect individual SWB because of envy and jealousy (Akay et al., 2012)

<sup>2</sup> Signal effects: or "tunnel effect" refers to that the income of a reference group can positively affect SWB if individual treats the higher reference income as a signal for future income (Akay et al., 2012)



migrants, and the signal effect when compared with urban workers. Besides, they find out that migrants' SWB is affected only by perceived income instead of absolute income.

As pointed out by Chen and Davey (2008), more literature on SWB at the national level in China is needed. What's more, there is scant literature on the relationship between SWB and insurance. This study fills the gap in the body of literature by providing an empirical analysis of the relationship between SWB and income and insurance using quantitative data from the Chinese Household Income Project 2013. The objective of this study is to determine whether income and insurance play a significant role in Chinese nationals' SWB and if these effects vary among different socioeconomic groups.

## **3. Data and Methodology**

### **3.1 Data**

The data used in this thesis are from the 5<sup>th</sup> wave of China Household Income Project (CHIP2013) which is supported by the National Natural Science Fund and National Bureau of Statistics. The survey is organized by China Institute for Income Distribution in Beijing Normal University and conducted by the Annual Household Survey Office of Integration of Urban and Rural in National Bureau of Statistics. CHIP2013 is selected from the big sample of the annual integration household survey sample of the National Bureau of Statistics. Using a systematic sampling method in three layers of east, center and west, CHIP2013 contains information of 18,948 households and 64,777 individuals from 15 provinces, 126 cities and 234 counties in 2013, including their income and asset, work experience, subjective questions, personal information and so forth.

The data are about three different groups: rural, migrant and urban. A rural person is someone who is born, registered and working in the same rural area; similarly, an urban person is who is born, registered and working in an urban area; a migrant means someone who is born and registered in a rural area but now working in a city. The

survey questionnaire comprises several different parts and not every person in the household has answered all the questions. The questionnaire consists of several modules, not every person in the households has answered the whole questionnaire, only around half of the sample answered the questions we want. After eliminating the missing value and matching personal information, we obtain a final sample of 8,810 participants, containing 518 migrants, 4,602 rural people and 3,690 urban people.

Due to the information constraint, CHIP2013 data do not contain the 12 questions of the General Health Questionnaire, and it is impossible to construct the GHQ-12 measure of well-being in this analysis. Instead, SWB is measured directly through the happiness question: “All things considered, do you feel happy?”, and the participants can choose an answer from “Not happy at all”, “Not very happy”, “So-so”, “Happy”, “Very happy” and “Unsure/no answer”. After excluding the answers of “Unsure/no answer” (accounts for 0.97%, 0.62%, 0.67% of migrant, rural, urban groups respectively), in order to measure SWB numerically, the answers are transformed into an ordinal scale of 1 to 5, with 1 representing the lowest level of SWB and 5 representing the highest level of SWB. Similarly, the relative income variable is measured through the question “Compared to the average living standards of households in your city/town/county, do you consider your living standards to be?”. The answers are scored from 1 to 5 where a higher score represents a higher level of relative income. Another income variable, the absolute income, is calculated by the logarithm of individuals’ total income in 2013.

It is hard to decide the measure of insurance at first: among the 5 types of basic social insurance, it is hard to choose which kind of insurance or how many kinds of insurance should be chosen to represent insurance. The 5 kinds of insurance: medical insurance, pension insurance, work injury insurance, unemployment insurance and maternity insurance stand for different risk aversion attitudes and different aspects of assurance for the future. Finally, 6 insurance variables separately in the model: 5 dummy variables indicating the participation of 5 kinds of social insurances and 1 numerical variable showing how many kinds of insurance the individual has in total. Compared with using one single measure of insurance, using different insurance

variables each time in the estimation could eliminate the possibility that only certain insurance has an effect on SWB if the results remain consistent and significant. On the one hand, it allows investigation of the possibility that, for example, medical insurance has an effect on happiness because of people's particular concern toward health instead of the effect of insurance itself. On the other hand, the different effects of different kinds of insurance on SWB can also be examined.

Besides income and insurance variables, following the literature, other key explanatory variables used in the estimation of SWB are: age, age square, gender, marital status, years of education, and health condition (scaled from 1 to 5 where a higher score represents a higher level of health condition). Variable definitions and descriptive statistics of all variables for three groups and the full sample are reported in Table 8 and Table 9 of the Appendix, which shows that almost 94% of the individuals feel not bad or happy about their life while the migrants seem to feel the least happy and the urban people are the happiest group. The sample consists of more males than females, and the average age is around 40 for all groups. More than 90% of the people in the sample have already been married, graduated from junior high school and are in good health. The urban participants had the highest income while the rural ones the lowest, and surprisingly instead of the urban workers, the rural individuals are the most satisfied with their income while the migrants are the least satisfied. Regarding insurance, 97% of the people have joined medical insurance and 85% pension insurance. Only 21% of the people have joined work injury insurance and unemployment insurance, and an even lower proportion of only 16% of the people have joined maternity insurance. Among the three groups, insurance coverage in rural areas is extremely low, with a proportion of 8%, 6% and 5% respectively, and as expected the urban people have the highest coverage proportion of 38%, 41% and 29% respectively. On average, these people have joined 2.4 kinds of insurance, with the urban people having the highest insurance coverage and the rural people the lowest.

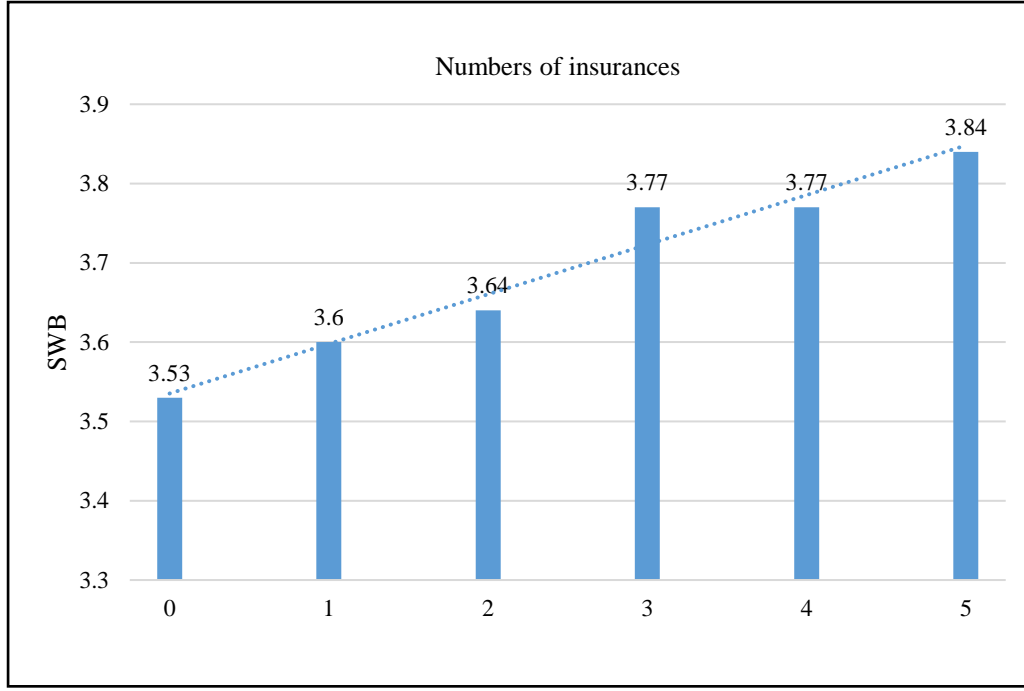
Before regression analysis, we first look into the mean SWB levels of different relative income and insurance groups to obtain an intuitive understanding of the relationship between SWB and income and insurance. As shown in Table 1, there is an

obvious increase in SWB from 3.11 to 4.27 as the relative income level increases, which is in line with the expectation that relative income has a positive effect on SWB. The 5 kinds of social insurances also show a positive influence on happiness: SWB is 0.1 higher for those who have medical insurance or pension insurance than those who do not, and 0.17 in the case of work injury insurance, unemployment insurance, and maternity insurance. Also, as shown in Fig. 1 subjective-well-being improves as the number of insurances increases. In general, the initial calculation seems to be consistent with the previous hypothesis, and further analysis will be carried out to verify the significance.

**Table 1** SWB distribution

	SWB (mean)		SWB (mean)
Relative Income		Number of insurances	
Substantially below average	3.11 (1.01)	0	3.53 (0.93)
Somewhat below average	3.41 (0.80)	1	3.60 (0.81)
About average	3.73 (0.75)	2	3.64 (0.81)
Somewhat above average	3.98 (0.72)	3	3.77 (0.76)
Substantially above average	4.27 (0.76)	4	3.77 (0.76)
Medical Insurance		5	3.84 (0.79)
Not attended	3.58 (0.92)	Unemployment Insurance	
Attended	3.68 (0.81)	Not attended	3.64 (0.81)
Pension Insurance		Attended	3.81 (0.77)
Not attended	3.59 (0.82)	Maternity Insurance	
Attended	3.69 (0.80)	Not attended	3.64 (0.81)
Work Injury Insurance		Attended	3.80 (0.78)
Not attended	3.64 (0.81)		
Attended	3.81 (0.77)		
N		8810	

**Fig.1.** The relationship between SWB and number of insurances



### 3.2 Methodology

Given to the ordered nature when participants reporting their subjective well-being, the methodology used in this thesis is ordered logit model:

$$Y_i^* = \gamma'Z_i + u_i$$

where the dependent variable  $Y_i^*$  is a single latent variable which is unobservable and only been known when it crosses thresholds;  $Z_i$  is a vector of independent variables and  $\gamma$  is a vector of coefficients for  $Z_i$ ;  $u_i$  is the error term or unobserved heterogeneities.

Considering the specific independent variables, the model of SWB is expressed as follows:

$$SWB_i^* = \alpha X_i + \beta Y_i + \gamma'Z_i + u_i$$

where SWB is measured by a set of income variables  $X_i$  including absolute and relative income, an insurance variables  $Y_i$  indicating a person's insurance attendant condition and a set of control variables  $Z_i$ , including age, age square, sex, marital status, education years and health condition.

Regarding the model, there is one concern that income and insurance variables

might have a substantial correlation which might affect the results. That is, given the income is the main variable to be estimated on happiness, the insurance is a “bad control” as it is an outcomes of income. In common sense, we need to pay the insurance premium to acquire certain insurance policy, therefore, higher-income people tend to be more possible to have insurance than the poor people. This might be true for the commercial insurance, however, for social insurance, some companies, especially the state-owned enterprises in China, will pay all or part of the social insurance premiums for their employees. For example, the average salary of a civil servant is certainly not as high as that of a salesman, but the salesman might not have the insurance because he has to pay the insurance fee all by himself/herself. This is also true for self-employed workers. Back in 2013, Chinese nationals’ awareness of the importance of insurance is quite low, which is supported by the fact that less than 25% of the Chinese people have bought work injury insurance or unemployment insurance or maternity insurance. At that time, the most possible approach for a successful self-employed worker to use his/her money is to deposit it in a bank. Therefore, insurance and income are not necessarily correlated in this case.

Empirical analysis is also needed to support this speculation. In order to solve this problem, we first look into the respective effects of income and insurance on SWB. As explained before, treated as a guarantee of current pleasant life and a bright future, income and insurance are expected to have a positive effect on happiness. Then, both income and insurance variables are included in the regression model to examine the associated effect of income and insurance. If there is a correlation between income and insurance, then the coefficient of insurance would be greatly influenced by the incorporation of income, leading to a great decrease or even insignificant. If both the coefficients in the separate and associated models remain significant and similar, then the correlation between income and insurance can be ruled out which means both income and insurance have certain different effects on SWB.

## **4. Results and Analysis**

### **4.1 The relationship between income/insurance and happiness**

The regression results of subjective well-being on income and insurance are reported in Table 2. For set of control variables, the results are consistent throughout different models and are in consistence with that of the most literature. The gender variable has a negative and significant coefficient in all models, which indicates that being a man generates less happiness than being a woman. Age has a negative and significant effect while age square has a positive and significant effect on SWB, which means that there is a “U-shaped” relationship between life satisfaction and age. Being married also helps to promote SWB as the coefficient is positive and significant all the time. The effect of education on happiness is one controversial point in the study of SWB. In this analysis, the positive and significant coefficient of education indicates that education brings happiness for people. Last, good health has a positive and significant effect on SWB as expected.

For income variables, it is also not surprising that both absolute income and relative income have a positive and significant effect on SWB. This means that the more money you earn and the more you earn than your peers, the happier you will be. For insurance variables, all coefficients are positive as expected, meaning that all kinds of insurance have a positive effect on SWB. However, surprisingly the coefficient of medical insurance is not significant, which makes it difficult to assert that medical insurance has an effect on happiness. This result appears to contradict the positive and significant coefficient of health that indicates people value the importance of good health. Considering the insurance coverage proportion, it can be caused by the fact that 98.5% of the people in the sample have already bought medical insurance so that it is hard to investigate the effect of medical insurance. Following medical insurance, unemployment insurance is significant but only at the 5% significance level compared with other insurances that are at the 1% level. Work injury insurance has the strongest

effect on SWB, followed by pension insurance and maternity insurance. The positive and significant coefficient of the number of insurances means that the more insurances you have, the happier you will be, which again supports the speculation that insurance has a positive effect on SWB.

**Table 2** Regression Results on Income and Insurance Respectively

	1a	1b	1c	1d	1e	1f	1g
Male	-0.319*** (0.045)	-0.255*** (0.044)	-0.257*** (0.044)	-0.252*** (0.044)	-0.249*** (0.044)	-0.242*** (0.044)	-0.246*** (0.044)
Age	-0.073*** (0.014)	-0.058*** (0.014)	-0.061*** (0.014)	-0.059*** (0.014)	-0.059*** (0.014)	-0.058*** (0.014)	-0.060*** (0.014)
Age square	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
Married	0.951*** (0.076)	1.036*** (0.075)	1.040*** (0.075)	1.048*** (0.075)	1.043*** (0.075)	1.046*** (0.075)	1.044*** (0.075)
Education	0.056*** (0.007)	0.073*** (0.007)	0.071*** (0.007)	0.063*** (0.007)	0.066*** (0.007)	0.066*** (0.007)	0.062*** (0.007)
Health	0.439*** (0.028)	0.528*** (0.027)	0.526*** (0.027)	0.529*** (0.027)	0.529*** (0.027)	0.527*** (0.027)	0.528*** (0.027)
Absolute income	0.120*** (0.025)						
Relative income	0.657*** (0.028)						
Medical insurance		0.123 (0.133)					
Pension insurance			0.192*** (0.059)				
Work injury insurance				0.219*** (0.054)			
Unemployment insurance					0.137** (0.055)		
Maternity insurance						0.195*** (0.060)	
Number of insurances							0.079*** (0.018)

\* Significance level at 10 percent.

\*\* Significance level at 5 percent.

\*\*\* Significance level at 1 percent.



## 4.2 The relationship between income, insurance and happiness

To examine the correlation between income and insurance and the associated effect of these two factors, both income and insurance variables are included in the models and the regression results are reported in Table 3. Compared with the results in section 4.1, with only small-range variations, the coefficients of control variables and income variables are almost the same as that in the model (1a) which only contains income variables. In other words, compared with the models from (1b) to (1g) which only contains insurance variables, the absolute value of gender and age is boosted while the absolute value of being married, education and health is reduced. What's more, the signal of the coefficients of insurance variables remain the same as that in the model containing only insurance variables, while the absolute values become smaller when the income variables are included. As a result, the coefficient of medical insurance remains insignificant, and those of work injury insurance and the number of insurances stay significant and are at 1% level. The significance level of pension insurance and unemployment insurance drops by one level from 1% and 5% to 5% and 10% respectively. The most influenced variable is the maternity insurance whose coefficient used to be significant and at 1% level, but now significant only at 10% level..

The changes in the coefficients indicate that the effect of insurance on SWB is reduced when we add income variables into the regression model. Therefore, it is impossible for us to completely deny the correlation between income and insurance variables. The correlation coefficients for absolute income and five insurances are positive and significant: 0.05, 0.07, 0.03, 0.02, and 0.05 for medical, pension, work injury, unemployment, and maternity insurance respectively. The correlation coefficients between relative income and five insurances are: -0.01, 0.00, 0.29, 0.30, and 0.26 for medical, pension, work injury, unemployment, and maternity insurance respectively, while the correlation coefficients for relative income and medical insurance (-0.01) and pension insurance (0.00) are not significant. We can draw the

conclusion that the insurance “picks up” the effect of income on SWB. However, the fact that the signal of the coefficients of insurance variables remains unchanged and the coefficients of most of the insurance variables are significant despite the inclusion of the income variables indicates that insurance also has its own effect on SWB. Therefore, although we cannot rule out the possible correlation between insurance and income, we cannot deny the effect of insurance. The order of the influence of each insurance on SWB is: work injury insurance has the strongest effect, followed by pension insurance and then by maternity insurance and unemployment insurance, and the effect of medical insurance is not significant. To accurately assess the effect of insurance, it is necessary to include the income variables in the model, otherwise the effect of insurance will be magnified. Thus, unless otherwise specified in the subsequent analysis, all models in this thesis include both income and insurance variables.

**Table 3** Associated Effects: Regression Results on Income and Insurance

	2a	2b	2c	2d	2e	2f
Male	-0.319*** (0.045)	-0.320*** (0.045)	-0.313*** (0.045)	-0.312*** (0.045)	-0.310*** (0.045)	-0.309*** (0.045)
Age	-0.073*** (0.014)	-0.075*** (0.014)	-0.073*** (0.014)	-0.073*** (0.014)	-0.072*** (0.014)	-0.074*** (0.014)
Age square	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
Married	0.950*** (0.076)	0.951*** (0.076)	0.957*** (0.076)	0.953*** (0.076)	0.954*** (0.076)	0.954*** (0.076)
Education	0.056*** (0.007)	0.055*** (0.007)	0.050*** (0.007)	0.052*** (0.007)	0.053*** (0.007)	0.050*** (0.007)
Health	0.439*** (0.028)	0.439*** (0.028)	0.442*** (0.028)	0.440*** (0.028)	0.440*** (0.028)	0.441*** (0.028)
Absolute income	0.120*** (0.025)	0.120*** (0.025)	0.108*** (0.026)	0.113*** (0.026)	0.114*** (0.026)	0.110*** (0.026)
Relative income	0.656*** (0.028)	0.654*** (0.028)	0.657*** (0.028)	0.658*** (0.028)	0.656*** (0.028)	0.655*** (0.028)
Medical insurance	0.027 (0.133)					
Pension insurance		0.125** (0.059)				
Work injury insurance			0.166*** (0.055)			
Unemployment insurance				0.103*		

	(0.056)		
Maternity insurance		0.108*	
		(0.061)	
Number of insurances			0.053***
			(0.018)

---

\* Significance level at 10 percent.

\*\* Significance level at 5 percent.

\*\*\* Significance level at 1 percent.

### 4.3 Heterogeneity

The heterogeneity of these effects on different socioeconomic groups are also investigated. First, data categorization itself helps looking into the differences between migrant, rural and urban individuals. The special household registration system (*hukou*) in China forms this special classification. Under the *hukou* system, rural-to-urban migrants are those who were born in rural areas and now work in cities. They usually earn more money than their rural peers but have restricted access to public services such as schools in cities compared with urban residents. The SWB of this special group has attracted a lot of researchers' interest. Besides, no matter whether there is a correlation between income and insurance or not, it is worth comparing the differences between high-income and low-income groups. The attitudes of employed workers and self-employed workers are another concern in this study. As mentioned before, the company will pay insurance premiums for its employees. Therefore, some of the employees have insurance simply because the company has paid for it instead of out of their own intentions. However, for those self-employed workers, they have to pay all the insurance fee and completed all the formalities by themselves. Therefore, though they have both participated the insurance, their desire for insurance could be different between the employed and self-employed workers. Thus, it is necessary to compare the effect of income and insurance on these two groups.

#### 4.3.1 Addressing heterogeneity on area groups

The aforementioned household registration (*hukou*) system in China automatically

divides the Chinese nationals into three groups: rural group, migrant group and urban group. Normally, we have the impression that urban people tend to have a decent job, earn a relatively high income, and live a struggling material life mixed with both joy and pain. For rural people, they tend to have purer thoughts, with their income probably lower than that of their urban and migrant peers, but they also have less pressure and are easier to be satisfied. Migrants may be the most special group: they left their hometown in pursuit of a higher income/a better job or to fulfill their big-city dreams. With such special status and high expectations, they are often under more pressure and have more complicated emotions. Normally, they tend to feel superior to their rural friends and have an inferiority complex towards urban residents.

To investigate the different attitudes of these three groups towards happiness, the sample is divided into 4,594 rural individuals, 518 migrants, and 3,688 urban residents. The regression results in each group are shown in Table 4. The first thing worth noting is that the sample size of the migrant group is distinctly smaller than those of the other two groups, and the deviance of the migrant group is evidently larger than that of the rural and urban groups. Therefore, it is advisable to be skeptical about the results for the migrants. Migrants have a much lower sensitivity to absolute income than relative income as the coefficient of absolute income is insignificant throughout whole models and the coefficient of relative income remains significant at the 1% level. This indicates that migrants' SWB is more greatly influenced by other groups' income rather than their own absolute income. For medical insurance, all three groups' coefficients are insignificant which is in consistence with the basic results in section 4.2. For pension insurance, the coefficients of both the migrant and rural groups are insignificant while it has a positive effect on urban residents with a 5% significance level. The insignificant coefficients of the migrant and rural groups can be explained by their lack of awareness of the importance of pension in 2013. Back then, the pension system is not widely accepted in China and most rural residents and migrants still follow the traditional behavioral mode of relying on their bank savings for the future. For the work injury insurance variable, the migrant group's coefficient is significant at the 10% level, the rural group's coefficient is not significant and the urban group's coefficient is

**Table 4** Addressing heterogeneity on area groups

	3a			3b			3c			3d			3e			3f		
	Migrant	Rural	Urban	Migrant	Rural	Urban	Migrant	Rural	Urban	Migrant	Rural	Urban	Migrant	Rural	Urban	Migrant	Rural	Urban
Absolute income	0.049 (0.110)	0.140*** (0.034)	0.085* (0.044)	0.049 (0.110)	0.140*** (0.034)	0.082* (0.044)	0.025 (0.109)	0.135*** (0.034)	0.072 (0.045)	0.036 (0.109)	0.138*** (0.034)	0.080* (0.045)	0.045 (0.110)	0.137*** (0.034)	0.076* (0.045)	0.039 (0.109)	0.136*** (0.034)	0.071*** (0.045)
Relative income	0.533*** (0.100)	0.587*** (0.038)	0.782*** (0.044)	0.533*** (0.100)	0.586*** (0.038)	0.779*** (0.044)	0.544*** (0.101)	0.586*** (0.038)	0.782*** (0.044)	0.542*** (0.101)	0.587*** (0.038)	0.783*** (0.044)	0.534*** (0.100)	0.586*** (0.038)	0.782*** (0.044)	0.539*** (0.101)	0.585*** (0.038)	0.781*** (0.044)
Medical	0.095 (0.279)	-0.154 (0.298)	0.067 (0.180)															
Pension				0.068 (0.181)	0.061 (0.084)	0.229** (0.096)												
Work injury							0.377* (0.218)	0.124 (0.108)	0.143** (0.069)									
Unemployment										0.343 (0.242)	0.060 (0.124)	0.070 (0.069)						
Maternity													0.096 (0.255)	0.088 (0.133)	0.102 (0.074)			
# of insurances																0.079 (0.065)	0.038 (0.038)	0.050** (0.023)

\* Significance level at 10 percent.

\*\* Significance level at 5 percent.

\*\*\* Significance level at 1 percent.

significant at the 5% level. The high significance level for the urban group might be caused by its highest employment rate of 85.2%. For unemployment insurance and maternity insurance, all groups' coefficients remain insignificant. For the number of insurances, only the urban group's coefficient is significant and at the 5% level.

To sum it up, migrants' SWB is most greatly affected by work injury insurance. The reason is that lots of migrants are taking manual jobs that can cause industrial injury. The rural group is sensitive to no type of insurance and none of the rural group's insurance variable coefficients is significant. Further looking into the regression coefficients reveals that the absolute values are obviously smaller than those of the other two groups, which could be caused by the lack of understanding of the insurance system in rural areas in 2013. The urban group's SWB is affected by pension insurance, work injury insurance and the number of insurances. It is obvious that urban residents are more aware of the importance of insurance. The reason why unemployment insurance is not their priority could be that the chance for urban residents to be fired is relatively low and even if they are, they can still easily find a new job. As for maternity insurance, half of our sample are males who are less concerned about maternity insurance and even for females, the low occurrence rate could then lead to an insignificant coefficient.

### **4.3.2 Addressing heterogeneity on income groups**

As figured out in section 4.2, insurance variables are correlated with income variables. Therefore, it is worth investigating the attitudes of different income groups towards insurance. By defining the low-income group as individuals whose income is lower than the average income, the samples are divided into a low-income group of 3,832 and a high-income group of 4,978. The regression results for these two groups are shown in Table 5.

Firstly, the positive effect of absolute income is notably smaller for the low-income group than for the high-income group. As for the effect of insurance on the two groups, again both groups' coefficients are not significant for medical insurance. As for pension insurance, it has a positive effect on the high-income group with a 10% significance

level while the low-income group's coefficient is not significant. Similarly, work injury insurance has a positive effect on the high-income group with a 1% significance level while the coefficient is insignificant for the low-income group. To figure out the reason, we look into the proportions of the low-income people in different areas. It turns out that 57.1% of the rural group are of low income compared, with only 27.4% in the migrant group and 28.8% in the urban group. The overlapping of the rural group and low-income matches the stereotype that rural areas tend to be poorer than urban areas. This overlap then can explain why the coefficients of so many kinds of insurances are not significant in the low-income group as most of them are rural people who lack awareness of insurance. For unemployment insurance, both groups' coefficients are insignificant; for maternity insurance, the high-income group's coefficient remains insignificant while the low-income group's coefficient is significant and at the 10% level. Both groups' coefficients are significant for the number of insurances and at the 5% significance level.

In conclusion, the work injury insurance has the strongest effect on the high-income group's SWB, followed by pension insurance, unemployment insurance, and maternity insurance, and medical insurance has no significant effect. The importance of work injury insurance is understandable as most high-income people usually have high-intensity work and work overtime. Work pressure can pose a risk to their health and thus work injury insurance becomes vital. Their high income makes pension insurance less attractive, and their ability to find a decent job renders unemployment insurance dispensable. For the low-income group, however, their SWB is influenced by the number of insurances they have and maternity insurance while the other four kinds of insurances have no significant effects. The different regression results between the low-income and high-income groups overlap with the difference between different area groups to some extent as the division overlaps to some extent.

### **4.3.3 Addressing heterogeneity on employment groups**

As mentioned before, social insurance in China is not compulsory for every

**Table 5** Addressing heterogeneity on income groups

	4a		4b		4c		4d		4e		4f	
	High Income	Low Income	High Income	Low Income	High Income	Low Income	High Income	Low Income	High Income	Low Income	High Income	Low Income
Absolute income	0.270*** (0.069)	0.079* (0.041)	0.268*** (0.069)	0.079* (0.041)	0.250*** (0.069)	0.077* (0.041)	0.260*** (0.069)	0.076* (0.041)	0.262*** (0.069)	0.076* (0.041)	0.253*** (0.069)	0.076* (0.041)
Relative income	0.690*** (0.037)	0.601*** (0.042)	0.687*** (0.037)	0.598*** (0.042)	0.691*** (0.037)	0.603*** (0.042)	0.691*** (0.037)	0.603*** (0.042)	0.689*** (0.037)	0.602*** (0.042)	0.689*** (0.037)	0.600*** (0.042)
Medical	-0.013 (0.168)	0.101 (0.223)										
Pension			0.138* (0.078)	0.119 (0.091)								
Work injury					0.167*** (0.063)	0.183 (0.116)						
Unemployment							0.095 (0.065)	0.145 (0.117)				
Maternity									0.071 (0.071)	0.253* (0.133)		
# of insurances											0.047** (0.022)	0.078** (0.038)

\* Significance level at 10 percent.

\*\* Significance level at 5 percent.

\*\*\* Significance level at 1 percent.



Chinese citizen, especially the different payment methods between employed and self-employed workers make the insurance coverage in these groups very different. Since employed workers have their companies to help them pay part of or even all insurance premiums, it is normal that more employed workers take out insurance than self-employed ones. However, because the self-employed group has to pay the premiums all by themselves, they would not buy insurance unless they think it is important and useful to them. Although there is a large proportion of the employed workers who bought many kinds of insurances, personally they may not care about the importance of insurance. Therefore, it is interesting and necessary to examine the effect of insurance on these two groups' SWB.

The regression results of the employed and self-employed groups are shown in Table 6. Employed workers and self-employed workers hold different attitudes towards income: absolute income affects self-employed group's happiness more while relative income affects the employed group's SWB more. These differences indicate that the employed workers care more about their income in relation to that of people around them while the self-employed group only cares about their own absolute income. For medical insurance, both groups' coefficients are not significant. For pension insurance, there was no significant effect on the employed group and a positive effect on the self-employed group with a 5% significance level. This can be due to the fact that compared with the regular monthly income of employed workers, self-employed individuals' income is more irregular and riskier, so that self-employed individuals need to buy pension insurance for their future. As for work injury insurance, unemployment insurance and maternity insurance, the employed group's coefficients are significant at 1%, 5% and 10% respectively while the self-employed group's coefficients are not significant for all of these three types of insurances. For the number of insurances, the employed group's coefficient is significant and at the 1% level while the self-employed group's coefficient is significant and at the 10% level, indicating the effect of the number of insurances was stronger on the employed workers.

To sum it up, for the employed workers, their SWB is greatly affected by the number of insurances especially work injury insurance, followed by unemployment

insurance and maternity insurance, while pension insurance and medical insurance have no significant effects. For the self-employed group, their SWB is strongly influenced by pension insurance and the number of insurances also has some influence; however, the coefficients of work injury insurance, unemployment insurance, maternity insurance and medical insurance are not significant at all. Through comparison of the results of these two groups, it is not hard to find out that employed workers' SWB is more affected by work-related insurances that can prepare them for what happens during work. This is easy to understand as most employed workers spend a large amount of time on work so that a safe work environment with insurance can certainly promote their SWB. Self-employed individuals concern about the natural uncertainty of their business most so that their happiness is more greatly affected by pension insurance which can provide safeguard for their future. As a result, it is no wonder that the employed group is more greatly influenced by the number of insurances they buy than the self-employed group.

**Table 6** Addressing heterogeneity on employment groups

	5a		5b		5c		5d		5e		5f	
	Employed	Self-employed	Employed	Self-employed	Employed	Self-employed	Employed	Self-employed	Employed	Self-employed	Employed	Self-employed
Absolute income	0.109*** (0.030)	0.135*** (0.049)	0.109*** (0.030)	0.137*** (0.049)	0.091*** (0.031)	0.128*** (0.049)	0.097*** (0.031)	0.132*** (0.049)	0.099*** (0.030)	0.133*** (0.049)	0.094*** (0.031)	0.131*** (0.049)
Relative income	0.677*** (0.031)	0.549*** (0.062)	0.674*** (0.031)	0.549*** (0.062)	0.675*** (0.031)	0.556*** (0.062)	0.676*** (0.031)	0.555*** (0.062)	0.675*** (0.031)	0.554*** (0.062)	0.674*** (0.031)	0.551*** (0.062)
Medical	-0.082 (0.156)	0.332 (0.258)										
Pension			0.087 (0.068)	0.244** (0.123)								
Work injury					0.179*** (0.058)	0.276 (0.254)						
Unemployment							0.117** (0.059)	0.091 (0.246)				
Maternity									0.117* (0.064)	0.062 (0.253)		
# of insurances											0.052*** (0.020)	0.123* (0.066)

\* Significance level at 10 percent.

\*\* Significance level at 5 percent.

\*\*\* Significance level at 1 percent.

#### 4.4 Robustness Check

In order to examine the credibility of the above-mentioned findings, besides ordered logit regression, ordered probit and OLS regression is also used to test the robustness of the results. The results for the whole sample are shown in Table 7. For control variables, despite the differences in the absolute value of the coefficients and in the marginal effect, both signal and significance for the control variables remain the same for the three regression methods. This result again proves the widely accepted conclusion that being a male has a negative effect on SWB, being married, educated and in good health have a positive effect on it, as well as the “U-shaped” relationship between age and happiness. As for income variables, both absolute income and relative income’s effects are positive and significant in every model. Therefore, the results are robust for qualitative analysis and its robustness for quantitative analysis needs further examination.

For insurance variables, medical insurance coefficient is insignificant in all three types of regression while the coefficients of work injury insurance and the number of insurances remain significant at the 1% level for all models. The other three kinds of insurances stay significant in all regression but at different significance levels: the pension insurance coefficient is significant and at the 5% level in ordered logit and OLS regression, and the 10% significance level in ordered probit regression; the unemployment insurance coefficient is significant and at the 10% level in ordered logit regression but at the 5% significance level in ordered probit and OLS regression; the maternity insurance coefficient is significant and at the 10% level in ordered logit and OLS regression but at the 5% significance level in ordered probit regression. In all regression, work injury insurance has the strongest effect on SWB, the second and the third strongest effect is from pension insurance or maternity insurance; unemployment insurance is the next and medical insurance has no effect. Despite the results of three regression methods being not exactly the same, most qualitative conclusions maintain the same in these regressions. Therefore, we can draw the conclusion (although without

concrete proof) that the above-mentioned results are relatively robust for different estimation methods.

**Table 7** Robustness Check

	6a			6b			6c			6d			6e			6f		
	Ordered Logit	Ordered Probit	OLS	Ordered Logit	Ordered Probit	OLS	Ordered Logit	Ordered Probit	OLS	Ordered Logit	Ordered Probit	OLS	Ordered Logit	Ordered Probit	OLS	Ordered Logit	Ordered Probit	OLS
Male	-0.319*** (0.045)	-0.188*** (0.026)	-0.128*** (0.018)	-0.320*** (0.045)	-0.188*** (0.026)	-0.128*** (0.018)	-0.313*** (0.045)	-0.184*** (0.026)	-0.125*** (0.018)	-0.312*** (0.045)	-0.184*** (0.026)	-0.125*** (0.018)	-0.310*** (0.045)	-0.182*** (0.026)	-0.124*** (0.018)	-0.309*** (0.045)	-0.182*** (0.026)	-0.124*** (0.018)
Age	-0.073*** (0.014)	-0.042*** (0.008)	-0.030*** (0.005)	-0.075*** (0.014)	-0.043*** (0.008)	-0.030*** (0.005)	-0.073*** (0.014)	-0.042*** (0.008)	-0.030*** (0.005)	-0.073*** (0.014)	-0.043*** (0.008)	-0.030*** (0.005)	-0.072*** (0.014)	-0.042*** (0.008)	-0.029*** (0.005)	-0.074*** (0.014)	-0.043*** (0.008)	-0.030*** (0.005)
Age square	0.001*** (0.000)	0.001*** (0.000)	0.000*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.000*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.000*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.000*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.000*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	0.000*** (0.000)
Married	0.950*** (0.076)	0.518*** (0.042)	0.365*** (0.029)	0.951*** (0.076)	0.518*** (0.042)	0.365*** (0.029)	0.957*** (0.076)	0.522*** (0.042)	0.368*** (0.029)	0.953*** (0.076)	0.520*** (0.042)	0.366*** (0.029)	0.954*** (0.076)	0.521*** (0.042)	0.367*** (0.029)	0.954*** (0.076)	0.520*** (0.042)	0.367*** (0.029)
Education	0.056*** (0.007)	0.031*** (0.004)	0.021*** (0.003)	0.055*** (0.007)	0.030*** (0.004)	0.020*** (0.003)	0.050*** (0.007)	0.027*** (0.004)	0.018*** (0.003)	0.052*** (0.007)	0.028*** (0.004)	0.019*** (0.003)	0.053*** (0.007)	0.029*** (0.004)	0.019*** (0.003)	0.050*** (0.007)	0.027*** (0.004)	0.018*** (0.003)
Health	0.439*** (0.028)	0.245*** (0.015)	0.167*** (0.010)	0.439*** (0.028)	0.245*** (0.015)	0.167*** (0.010)	0.442*** (0.028)	0.247*** (0.015)	0.168*** (0.010)	0.440*** (0.028)	0.246*** (0.015)	0.168*** (0.010)	0.440*** (0.028)	0.245*** (0.015)	0.167*** (0.010)	0.441*** (0.028)	0.246*** (0.015)	0.168*** (0.010)
Absolute income	0.120*** (0.025)	0.072*** (0.014)	0.050*** (0.010)	0.120*** (0.025)	0.072*** (0.014)	0.050*** (0.010)	0.108*** (0.026)	0.064*** (0.015)	0.044*** (0.010)	0.113*** (0.026)	0.068*** (0.015)	0.047*** (0.010)	0.114*** (0.026)	0.068*** (0.015)	0.047*** (0.010)	0.110*** (0.026)	0.066*** (0.015)	0.045*** (0.010)
Relative income	0.656*** (0.028)	0.358*** (0.015)	0.247*** (0.010)	0.654*** (0.028)	0.357*** (0.015)	0.246*** (0.010)	0.657*** (0.028)	0.359*** (0.015)	0.247*** (0.010)	0.658*** (0.028)	0.359*** (0.015)	0.247*** (0.010)	0.656*** (0.028)	0.358*** (0.015)	0.247*** (0.010)	0.655*** (0.028)	0.357*** (0.015)	0.246*** (0.010)
Medical	0.027 (0.133)	0.011 (0.075)	0.014 (0.051)															
Pension				0.125** (0.059)	0.066* (0.034)	0.046** (0.023)												

Work injury	0.166 <sup>***</sup>	0.106 <sup>***</sup>	0.072 <sup>***</sup>									
	(0.055)	(0.031)	(0.021)									
Unemployment				0.103 <sup>*</sup>	0.065 <sup>**</sup>	0.044 <sup>**</sup>						
				(0.056)	(0.032)	(0.022)						
Maternity							0.108 <sup>*</sup>	0.070 <sup>**</sup>	0.046 <sup>*</sup>			
							(0.061)	(0.035)	(0.024)			
# of insurances										0.053 <sup>***</sup>	0.032 <sup>***</sup>	0.022 <sup>***</sup>
										(0.018)	(0.011)	(0.007)

\* Significance level at 10 percent.

\*\* Significance level at 5 percent.

\*\*\* Significance level at 1 percent.

## 5. Conclusions

After using CHIP2013 data to analyze the relationship between Chinese citizens' SWB and their income and insurance, the basic conclusion drawn from the basic models is that both absolute and relative income and most insurance variables have a positive and significant effect on happiness as expected. What's more, there is a correlation between income and insurance, and therefore, it is necessary to stress the importance of including income variables for investigating the effect of insurance. Specifically, for five social insurance variables, work injury insurance has the strongest effect on SWB, followed by pension insurance and then by unemployment insurance and maternity insurance which have similar effects on SWB. The positive medical insurance on SWB reported in Appleton and Song (2008) is not proved in this analysis due to the fact that the medical insurance coverage in the sample reaches 98.5%, making it infeasible to determine the effect of medical insurance. Besides, the number of insurances also has a positive and significant effect on happiness.

The effects of income and insurance are also analyzed based on different groups to figure out the different preferences. Among three area groups, migrants only care about relative income that absolute income has no significant effect on their SWB. This result reflects the typical migrants' hidden thoughts that they want to be better off than their rural peers and want to catch up with urban residents. There is different awareness of insurance: the urban group emphasizes insurance the most, followed by the migrants, while the rural group's awareness of insurance is very low that all insurance variables' coefficients are insignificant for this group. The results are consistent with Appleton & Song (2008) that urban residents value pension insurance the most, and then work injury insurance. Our result that migrants only value work injury insurance is contrary to Fang & Sakellariou (2016), which is possibly because that the sample of migrant CHIP2013 is too small. Among two income groups, the low-income group is much less sensitive to absolute income than the high-income group but both two groups' SWB is affected



by relative income. The results for the high-income group are very similar to the basic results that work injury insurance is the most influential insurance, followed by pension insurance. However, the results for the low-income group is quite confusing because only maternity insurance of the five types of social insurance has a significant effect. The only reasonable explanation is that the proportion of females in the low-income group (38.9%) is larger than that in the high-income group (30.6%). Between the employed and self-employed groups, there is a distinct difference in two groups' attitudes towards income and insurance. Both absolute income and relative income have a positive and significant effect on the employed and self-employed groups while the former is more concerned about relative income and the latter is more concerned about absolute income. In terms of insurances, work-related insurances, such as work injury insurance, unemployment insurance and maternity insurance, have a positive and significant effect on employed workers while only pension insurance can affect the self-employed group's SWB.

These results can be useful for both companies and the government. As the importance of work-related insurance for employees' SWB is confirmed, companies should pay more attention to workers' insurance coverage to promote their happiness. Especially, work injury insurance is of great significance to workers. It will be a win-win strategy for both employees and the company to buy employees more insurances as insurances can also prepare companies for sporadic accidents. For the government, establishing a sound insurance system can improve its nationals' SWB. The first thing that the government can do is to promote rural people's insurance awareness. Though most rural people have bought medical and pension insurance through the government's effort, it fails to improve their SWB due to the lack of insurance awareness. It is a real pity that insurances do not have the expected influence. Secondly, as the self-employed group values pension insurance the most, the government should make sure that self-employed workers take out pension insurance or devise special insurance policies for them. Thirdly, the number of insurances is significant in the whole sample, and thus, the government should implement insurance policies at an individual level nationwide as the coverage rate of work injury insurance, unemployment insurance and maternity

insurance is still quite low.

The effect of income and insurance on SWB is examined and proven in this thesis. Absolute and relative income has different effects on different groups based on empirical analysis, and it will be interesting to investigate these differences in different countries. However, the effect of income is widely accepted while the effect of insurance is relatively less confirmed. In order to further verify the effect of insurance, the next research can use the propensity score matching method to compare CHIP2007 where the insurance participant rate is quite low and CHIP2013 where the insurance participant rate is significantly increased due to the Chinese government's insurance campaign in 2008. In addition, the social insurance used in this thesis is designed for the whole country which thus inevitably has a limitation on coverage and premiums. Therefore, in future research, commercial insurance can be used instead of basic social insurance to deeply investigate insurance's effect.

The unexpected shock of COVID-19 occurs in China at the beginning of 2020, and the government has made the decision to pay the medical expenses for all COVID-19 patients. Up to April 6<sup>th</sup>, the total expenses have reached 1.486 billion yuan (US\$0.21 billion), among which 0.99 billion yuan (US\$0.14 billion) is paid by medical insurance. Every Chinese has become aware of the importance of joining medical insurance and happiness driven by it. It is believed that the insurance industry is likely to see significant growth following this pandemic. Therefore, further studies can investigate that after the breakout of COVID-19 how the insurance industry in China would develop and their impact on citizens' consumption choice and subjective well-being.

# References

- Akay, A., Bargain, O., & Zimmermann, K. F. (2012). Relative concerns of rural-to-urban migrants in China. *Journal of Economic Behavior & Organization*, 81(2), 421-441.
- Appleton, S., & Song, L. (2008). Life satisfaction in urban China: Components and determinants. *World Development*, 36(11), 2325-2340.
- Blanchflower, D. G., & Oswald, A. J. (2008). Is well-being U-shaped over the life cycle?. *Social science & medicine*, 66(8), 1733-1749.
- Chen, Z., & Davey, G. (2008). Happiness and subjective wellbeing in mainland China. *Journal of Happiness Studies*, 9(4), 589-600.
- Clark, A. E., & Oswald, A. J. (1996). Satisfaction and comparison income. *Journal of public economics*, 61(3), 359-381.
- Clark, A. E., Frijters, P., & Shields, M. A. (2008). Relative income, happiness, and utility: An explanation for the Easterlin paradox and other puzzles. *Journal of Economic literature*, 46(1), 95-144.
- Diener, E. (1984). Subjective well-being. *Psychological bulletin*, 95(3), 542.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological bulletin*, 125(2), 276.
- Diener, E., Oishi, S., & Lucas, R. E. (2015). National accounts of subjective well-being. *American Psychologist*, 70(3), 234.
- Dolan, P., Peasgood, T., & White, M. (2008). Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective well-being. *Journal of economic psychology*, 29(1), 94-122.
- Easterlin, R. A. (1974). Does economic growth improve the human lot? Some empirical evidence. In *Nations and households in economic growth* (pp. 89-125). Academic Press.
- Easterlin, R. A. (2001). Income and happiness: Towards a unified theory. *The economic journal*, 111(473), 465-484.
- Easterlin, R. A., Morgan, R., Switek, M., & Wang, F. (2012). China's life satisfaction, 1990–2010. *Proceedings of the National Academy of Sciences*, 109(25), 9775-

9780.

- Fang, Z., & Sakellariou, C. (2016). Social insurance, income and subjective well-being of rural migrants in China—An application of unconditional quantile regression. *Journal of Happiness Studies*, 17(4), 1635-1657.
- Graham, C., Eggers, A., & Sukhtankar, S. (2004). Does happiness pay?. In *Challenges for Quality of Life in the Contemporary World* (pp. 179-204). Springer, Dordrecht.
- Hayo, B., & Seifert, W. (2003). Subjective economic well-being in Eastern Europe. *Journal of Economic Psychology*, 24(3), 329-348.
- Hirschman, A. O., & Rothschild, M. (1973). The changing tolerance for income inequality in the course of economic development: With a mathematical appendix. *The Quarterly Journal of Economics*, 87(4), 544-566.
- Mo, X., & Tang, C. (2016). [Income, Subjective well-being and rural-urban divide—The empirical evidence from CHIP]. *Commercial Research*, (11), 158-167.
- OECD. Publishing, & Organisation for Economic Co-operation and Development. (2013). *OECD guidelines on measuring subjective well-being*. OECD Publishing.
- Schneider, S. M. (2012). Income inequality and its consequences for life satisfaction: What role do social cognitions play?. *Social Indicators Research*, 106(3), 419-438.
- Şimşek, Ö. F. (2009). Happiness revisited: Ontological well-being as a theory-based construct of subjective well-being. *Journal of Happiness Studies*, 10(5), 505-522.
- Sjöberg, O. (2010). Social insurance as a collective resource: unemployment benefits, job insecurity and subjective well-being in a comparative perspective. *Social Forces*, 88(3), 1281-1304.
- Stevenson, B., & Wolfers, J. (2013). Subjective well-being and income: Is there any evidence of satiation?. *American Economic Review*, 103(3), 598-604.
- Winkelmann, R. (2005). Subjective well-being and the family: Results from an ordered probit model with multiple random effects. *Empirical Economics*, 30(3), 749-761.
- Yang, S., Xie, C., & Yang, S. (2016). [Income, insurance and the happiness of residents—Empirical data from Chinese Household Income Project Survey]. *Journal of Yunnan University of Finance and Economics*, (3), 69-80.
- Zhang, Z., & Tan, Y. (2018). [Social insurance and Chinese national well-being]. *Financial Economics Research*, (3), 10.

Zhao, X., Fan, X., & Jiang, Y. (2013). [Income, expectation and public subjective happiness—Empirical study based on China survey data]. *Economist*, 9(9), 15-23.

Zhou, S., & Yu, X. (2017). [Regional heterogeneity of life satisfaction in urban china: Evidence from hierarchical ordered logit analysis]. *Social Indicators Research*, 132(1), 25-45.

# Appendix

**Table 8** Variable Definitions

Variable Name	Variable Definition
SWB	=1, Not happy at all; =2, Not very happy; =3, So-so; =4, Happy; =5 Very Happy
Age	
Age Square	
Male	=1, Male; =0, Female
Married	=1, Married; =0, Not married yet or divorced
Education	Years of education
Health	=1, Very poor; =2, Poor; =3, Average; =4, Good; =5, Excellent
Absolute Income	Logarithm of individuals' total income in 2013
Relative Income	=1, Substantially below average; =2, Somewhat below average; =3, About average; =4, Somewhat above average; =5 Substantially above average
Medical Insurance	=1, acquired; =0, Not acquired
Pension Insurance	=1, acquired; =0, Not acquired
Work Injury Insurance	=1, acquired; =0, Not acquired
Unemployment Insurance	=1, acquired; =0, Not acquired
Maternity Insurance	=1, acquired; =0, Not acquired
Insurance Number	Number of insurances acquired, vary from 0 to 5

**Table 9** Descriptive Statistics

	Migrant	Rural	Urban	Full Sample
<b>SWB Distribution</b>				
Not happy at all (%)	1.35	0.89	0.79	0.87
Not vary happy	5.02	5.11	4.15	4.70
So-so	40.73	36.77	30.84	34.52
Happy	39.38	44.89	47.59	45.70
Very happy	13.51	12.34	16.64	14.21
Average SWB	3.59	3.63	3.75	3.68
Male (%)	57.53	77.18	52.66	65.75
Average Age	36.90	45.98	42.70	44.07
Married (%)	82.24	92.13	89.92	90.62
Mean Education	9.54	8.02	11.60	9.61
<b>Health Condition Distribution</b>				
Very poor (%)	0.19	0.46	0.22	0.34
Poor	1.35	3.56	2.14	2.84
Average	11.97	18.56	18.13	17.99
Good	45.17	47.33	47.26	47.17
Excellent	41.31	30.10	32.25	31.66
Average Health Condition	4.26	4.03	4.09	4.06
Average Absolute Income	10.26	9.73	10.29	9.99
<b>Relative Income Distribution</b>				
Substantially below average (%)	9.46	4.22	4.72	4.73
Somewhat below average	28.38	21.69	24.69	23.34
About average	48.07	54.17	53.55	53.55
Somewhat above average	11.58	18.69	15.80	17.06
Substantially above average	2.51	1.24	1.25	1.32
Average Relative Income	2.69	2.91	2.84	2.87
Medical Insurance (%)	89.77	99.07	96.70	97.53
Pension Insurance (%)	68.73	86.55	86.88	85.64
Work Injury Insurance (%)	22.01	7.83	37.85	21.24
Unemployment Insurance (%)	17.95	5.91	41.46	21.51
Maternity Insurance (%)	14.86	4.89	28.94	15.55
Average Insurance Number	2.13	2.04	2.91	2.41
Sample Size	518	4602	3690	8810