The Impact of Different Educational Experiences on Non-cognitive Ability and Consumption Decision – Based on the Analysis of Dynamic Monitoring Data of Floating Population in China

Abstract

This paper mainly studies the impact of general high-school education and vocational high-school education on consumption decision-making of floating population，through their different influences on people's non-cognitive ability. After controlling individual characteristics (such as age, gender, location of household registration, household registration, etc.) and income, this article empirically finds that the consumption ratio of floating population graduate from secondary vocational school is higher than those from senior high school, and after further controlling the uncertainty of future revenue and expenditure, this result remained significant. The difference in non-cognitive ability brought by different educational experiences can explain to a certain extent the phenomenon that the consumption proportion of the floating population with vocational high-school education is higher. This article finds that secondary vocational high-school graduates do a better job in self-control ability of non-cognitive ability, and it is easier to think that there is difference between themselves and local residents, which shows a stronger demand for social recognition. This socially recognized demand is manifested in the fact that vocational high-school education can significantly narrow the gap in consumption levels between migrants and local residents. Meanwhile, this narrowing effect shows a non-linear increase as the income increases.

Key words: non-cognitive ability, vocational education, floating population, consumption, social recognition requirements

JEL Classification: I20 J01 J24 J30

Jingya Hou

PBC School of Finance

the Tsinghua University

Tsinghua University, Hai Dian, Beijing

houjy.12@pbcsf.tsinghua.edu.cn

1 Introduction

Forty years since China's reform and opening up, a huge floating population has formed in the cities along with China's rapid economic development and special urbanization path. According to the statistics of 'China's floating population Development Report 2017,' in 2016 China's migrant population is 245 million, in which the proportion of 80's new generation has reached 56.5%, i.e. the main force of the floating population.

At the same time, with the popularization of nine-year compulsory education in China, the average number of years of education for the new generation of floating population has reached 8.5 years , and there is still a certain gap compared to the average 10 years of education in developed countries. In the 'balanced' social development objectives in the new era, enhancing human capital through education, is not only of undoubtedly important significance in better achieving the role change from floating population to the public , but also the driving force of adapting to the future high-quality growth of China's economic. At present, senior high school education consists of two types: ordinary high school and secondary vocational education (both education of three years). By the end of 2016, there were in China nearly 11,000 secondary vocational schools and 16 million graduates, accounting for 40% of the total number of graduates enrolled in high school education. It can be seen that secondary vocational education plays an important role in high school education. Relatively general education is mainly for the purpose of studying for higher education. Secondary vocational education takes employment as the main objective, and it also emphasizes the training of skills for specific occupations. And there is no difference in the social recognition of education among young people who graduated from ordinary high school and from secondary vocational school. [1] , Moreover, the difference is also not significant in choosing more labor-intensive urban jobs in the job selection, due to the dual employment market brought by China's special household registration system.

Is there no difference in the impact of different educational experiences on the new generation of floating population entering the cities? This article focuses on the impact of secondary vocational education and ordinary high school education on the consumption behavior of the new generation of floating population after employment. It is found that the average consumption proportion of the floating population in secondary vocational education is higher, and it shows stronger social recognition in consumption. Therefore, this study not only provides a deeper understanding of how to promote the popularization of high school education, but also has important significance for understanding how education can better promote the integration of the new generation of floating population into cities and accelerate the process of citizenization, all of which have strong practicality and timeliness.

2 Literature background and innovation

2.1 Review of relevant literature

It is above all related to a variety of theoretical models of consumer behavior. Classical consumption theory believes that consumption is affected by the level of income and the uncertainty of future income and expenditures. Life-cycle theory of consumption and permanent income theory (Modigliani, 1971; Bewley, 1977; Hall, 1978) sees rational consumers would expect persistent income according to future revenue and wealth growth, and the current consumption will be determined based on their persistence income. At the same time, there are also literatures that liquidity constraints (Flavin, 1981; Hansen, 1983; Stephen, 1989) make it difficult for consumers to make intertemporal allocation of consumption, thus making the theory of life cycle consumption and persistent income theory untenable. Precautionary Theory (Leland, 1968; Deaton, 1991) stressed that consumers will make additional savings because of the risk aversion and uncertainty in coping with balance of future payments. In addition to being affected by income, relative income theory (Duesenberry, 1949; Freixas, 1985) proposed ratcheting effects and demonstration effects. Ratcheting effects thinks it is hard to change their short-term consumer inertia, so that the consumer features appear "easy on hard down"; and the demonstration effect of consumption (Carroll, 2000) will make consumers be more vulnerable with their own income or the influence of other consumer's consumption behavior with similar features, thus having "chasing" characteristics. Many literatures also link consumption with social structure and believe that consumption is not only influenced by economic factors, but also has social value that embodies social class status. By imitating consumer behaviors of specific social groups, it can show homogeneity between itself and those around it, and then improve positioning and identity recognized by society (Weber, 1987; Veblen, 1994; Bourdieu，1977). The literatures in China also addresses the traditional theory of life cycle theory (Shen Pu, 2002;), Persistence Income Theory (Liu Jianmin,2003) , Preventive Savings (Song Yi, 1999; Long Zhihe, 2000; Hang Bin, 2005; Zhou Jian , 2005 ; Yang Yi , 2009) , Relative Income Theory (Yi Xingjian, 2013; Zhou Jian, 2009) and Consumer Social Appreciation(Jian Xianming,2015) to verify and analyze the consumption behavior of Chinese urban residents, urban and rural residents, farmers and floating population theoretically and empirically. In short, researches believe that not only economic factors (such as income, uncertainty of future revenues and expenditures) affect consumption, but also social factors (such as social recognition, demonstration effects, etc.) should be considered.

Second, the study of consumer behavior on the transnational migrants. Many literatures focus on the consumption behavior of transnational immigrants. Dustmann (2007) believes that the relative price, the degree of consumer complementarity as well as the inflow country's human capital accumulation will all affect the consumer behavior of immigrants and their future relocation decisions. Stark (2005, 2013) found that immigrants from poor countries would increase human capital investments or savings in order to obtain higher returns through migration. Kirdar (2005), based on data of German immigrants, believes that the lower prices in host countries with respect to Germany will lead to lower consumption of immigrants in Germany, thus they choose to return back their countries of origin to enjoy greater purchasing power. Some research in China mostly starts with the survey data of the floating population in specific cities of China, analyze the consumption and consumption structure of the floating population, and compare the differences in consumption habits between the floating population and urban residents. By dividing the floating population into specific groups, such as the migrant workers (Man Wang, 2004); employment type, urban function type and social migrants (Su Zhixia, 1999); agricultural and non-agricultural floating population (Hu crazy, 2012); newborn urban floating population and rural -urban floating population (Liu Nina et al., 2013) , these researches have systematically discussed the differences between the floating population and urban-rural residents in terms of housing, transportation, and public services. There are also studies starting with specific influencing factors to analyze the impact of different factors on the consumption behavior of migrants. Yang Cuiying (2016) studied the differential influence of employee with and without pension insurance on the behavior of migrants' consumption behavior and found that the marginal consumer propensity and consumption elasticity of the rural insured persons is greater than that of non-guarantees. Tan Suhua (2015) divided the influencing factors of the floating population's consumption into economic variables, human capital variables, institutional constraint variables, family benefit variables and family life cycle variables, regional variables, and demographic variables. Feng Hong (2016) believe that the consumption of floating population has the dual characteristics of 'over-smoothness' and 'over-sensitivity'. Chu Tsinghua (2016) regarded the coexisted phenomenon that floating population not consume in the cities but inefficiently consume in rural areas as "the consumption dilemma of the floating population."

There are related literatures about the relationship between education, human capital, and consumer behavior. Some literatures generally believe that the higher the number of years of education, the higher the human capital, which will have an impact on household consumption investment (Grossman, 2000). In terms of impact mechanism, education can influence consumer behavior by changing family employment opportunities (Taylor, 2001), income level (Zagorsky 2007), risk appetite (Halek, 2001), family asset

composition, and cognitive ability (Cole, 1992) and so on. Some Chinese researches also found that education can have a significant impact on consumption. Ye Chunhui (2008) found that rural residents with lower education levels have less spending on health care. Zhou Hong (2011) found that families with a higher education have higher marginal propensity to consume and a stronger wealth effect. Zeng Yuchu (2007) believes that the level of consumer education will affect the individual's cognitive level, thus affecting the consumption of green food. Liu Xiezi (2017) believes that the level of education will have a more significant impact on consumer spending decisions at the medium-level consumption level. In short, China existing research pays more attention to educational investment and education return rate, but there are few studies on how education level affects the level of household consumption.

Some related studies are about the measurement and influence of cognitive and non-cognitive skills. Cognitive competence is generally defined as academic and computational, vocabulary and sentence comprehension, reading comprehension, and so on. Herrnstein (1994) first proposed the role of cognitive ability in social stratification, while Spence (1973) argued that high academic qualifications represent high skills, and that they can gain greater success and new skills in the new environment. However, they neglected non-cognitive abilities (such as personal characteristics such as credibility, self-control, accountability, and social competence). The economists of the new theory of human capital like Heckman (2001, 2005, 2006) divided human capital into cognitive and non-cognitive capabilities, and believe that both cognitive ability of the workforce (ability of mathematics and calculations, vocabulary and sentence comprehension) and non-cognitive ability (job stability, reliability, social skills, etc.) have a significant impact on wages and future achievements. Bowles (2001) proposed "incentive enhancing preferences" and found that employees with this preference are more involved in their work and more able to gain employer trust. There is relatively little research on cognitive and non-cognitive skills in China, and Huang Guoying (2017) used CFPS to obtain the level of cognitive ability and non-cognitive ability of the surveyed people, and found that the higher the cognitive and non-cognitive ability of China's urban labor force, the higher the income; but the explanatory power of both abilities after controlling the education level decreased significantly. Other scholars (Jun Ho son, 2017; Hu Bowen, 2017) have also yielded similar results, and found that family environment plays an important role in enhancing the non-cognitive ability.

2.2 Research issues in this article

From the existing literature, studies have focused on the number of years of education or the impact of human capital on consumption decisions of specific consumers.

However, there is no distinction between educational experiences of the same age but different content. From the development of consumption theory, consumption decisions are not only affected by economic variables such as income, but also influenced by social environment, which usually depends on the differences in consumer's non-cognitive ability (such as self-control ability, social ability and thinking openness, etc.) .

However, existing studies mainly focus on the impact of non-cognitive ability [2] on income, and less directly on the impact of non-cognitive ability on consumption. One reason is that it is difficult to exclude the endogenous effects of income. And China's vocational education system and unique dual employment structure provide a good opportunity for this study to examine whether different educational experiences will influence consumer decision-making by changing the difference of cognitive and non-cognitive abilities of the educated. First of all, according to the regulations of the Ministry of Education of China, secondary vocational school qualifications and high school education (three years of normal schooling) are collectively referred to as "high school graduates or have the same educational qualifications" and can both apply for entry to the general college entrance examination. In fact, they are often viewed equally in the labor market. Second, the formation of a dual labor market between China's huge population of migrants and the influx of residents [3] (Cai Fang, 2005; Yan Shanping, 2007), has resulted in young laborers who graduated from high school or graduated from secondary vocational school can only choose to work in labor-intensive industries with low employment barriers. Their mobility is relatively strong and income differences are small. Furthermore, from the perspective of the educational experiences of the two groups, they both have completed different levels of high school education after completing nine-year compulsory education. And from the perspective of whether they enter college, we can think there is little differences in ability and IQ of them [4] .That is, the differences in potential cognitive ability have been well controlled. Though the difference in their potential cognitive ability is well controlled, the two different educational experiences themselves may cause differences in the non-cognitive ability of secondary vocational school graduates and high school graduates [5].

In summary, the selection of high school education and secondary vocational school education samples from the floating population can well control the variables such as economic factors and unobserved individual cognitive abilities, so that we can better study the impact of education experiences on consumption decisions of the two groups, and the role played by differences in non-cognitive capabilities.

This paper selects the floating population with the same educational years from secondary vocational school and high school education background as research samples, effectively controls the comparability of the sample, and obtains the differential features

of consumption behavior for the of specific floating populations with vocational education and high school education experience. At the same time, after controlling factors such as income and uncertainty of future revenues and expenditures, this article finds that the floating population of secondary vocational education qualifications is more likely to be affected by the average level of urban residents' consumption and tends to increase consumption to get the average consumption gap with urban residents smaller， and to gain stronger social recognition.

2.3 The innovation of this article

This article has two major contributions to the existing literature. The first contribution is that a relatively new idea was selected to bring the interference of unobservable factors of the sample under control as much as possible, which improves the reliability of empirical results. The second contribution is that the research issue is an effective supplement to the existing literature. It not only focuses on the impact of vocational education on the consumption decision of the floating population, but also explores the impact of different educational experiences on people's non- cognitive ability which affects the consumption mechanism, and enriches the consumption theory.

Through this study, we can help the society further understand the impact of vocational education in a deeper way and help China better improve its education system. Meanwhile, it can further deepen the understanding of the migrant population's consumption and psychological conditions. It is also of great significance for encouraging domestic demand, improving the city's inclusiveness, accelerating the floating population's integration into the city and finally achieving a more balanced development of the population structure.

3 Data sources and description statistics

3.1 Sample selection and empirical model

This paper selected the 2010-2013 dynamic monitoring data of floating population of the National Health and Family Planning Commission of China. According to the education status of the entry person, we select the age of 16-25 year-old, unmarried, general high school or secondary vocational school education qualified and alone floating subjects as samples, a total of 17,897 observations.

The reason for choosing the above sample is mainly based on two considerations. On the one hand, considering that the consumption decision of the floating population is closely related to the decisions on marriage, childbirth, and old-age care, and will be

influenced by floating family strategies (such as whether they are couple, whether they are carrying young children and old parents, etc.), thus making it very complicated to explore the relationships between consumer decision-making and education and not conducive to gain credible results. On the other hand, from the 'learning by doing' point of view, long working experienceof floating population can reduce the impact of schooling on them, it is difficult to determine whether the consumer or other behavioral differences are caused by the different educational experience. Therefore, this article addresses these two issues by controlling the age, marital status, floating family number of migrants.

In order to examine the impact of vocational education on the consumption behavior of migrants, this article first establishes a basic regression.

$$\mathbf{c\_ratio} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1} * \mathbf{edu\_exp} + \boldsymbol{\beta_2} * \boldsymbol{control\ variables} + \boldsymbol{\varepsilon} \quad (1)$$

where **c_ratio** includes the overall consumption ratio of floating population (con_ratio) and consumption ratio after deducting rent and food expenditure (con_ratio1), and the proportion of effective consumption after adjustment of rent and food expenditure (con_ratio2) ; control variables include individual characteristics, employment characteristics, wealth characteristics, inflow and outflow characteristics of floating population.

3.2 Variable Definition and Description

In terms of measurement of the main explanatory variable–floating population's consumption expenditure, this paper uses the general practices of the mainstream literature in China and uses the related issues in the National Health and Family Planning Commission's floating population survey data. This article selects in the questionnaire "How much is your home total local expenditure per month?," "How much is the monthly rent of you or your home? ," "How much is your home's monthly local food expenditure? , " "How much money (matter) do you send or take back home totally over the past year?" and other issues to measure.

In the main explanatory variable, **edu_exp**, the floating population's education degree, this article defines the floating population of secondary vocational education as "**edu_exp=1**" and high school education as "**edu_exp=0**." In the selection of other control variables, this article also refers to the mainstream practice of domestic and foreign literature, and controls individual characteristics (age, nature of household registration, income, inflow time, flow range, etc.), employment characteristics (employment-owned industries, whether state-owned enterprises, whether individual non-corporate employment, etc.) , wealth effect (whether houses are owned), inflow and outflow characteristics (relative price level of inflow and outflow) , year and region effect . The variables are described in detail in Appendix table 1.

3.3 Descriptive Statistics of Main variables

As we can be seen from Appendix table 1, there are a total of 17897 observations in the sample. Sample average monthly income level of 2375 RMB Yuan shows little difference compared with the city's average monthly income of 2271 RMB Yuan. While the average monthly expenditure of migrants for 1292 RMB Yuan, is apparently less than city dwellers average monthly expenditure of 1839 RMB Yuan. Considering the additional rent migrants Cost, the difference between the two levels of consumption is even greater. Meanwhile, the variance between the average monthly income and expenditure is relatively large, with the maximum value at 10,000 RMB Yuan and 20,000 RMB Yuan respectively, and the average expenditure on food and rent for 565.16 RMB Yuan and 262.02 RMB Yuan, while minimum values are both 0 RMB Yuan because of "free packet of accommodation" for migrants in employment. This article will also deal with the following variables considering these factors.

In the total sample, the sample of secondary vocational education backgrounds accounted for 39%, the average age was 21.8 years, male accounted for 52%, the proportion of urban residents accounted for 14%, the proportion of employment of state-owned enterprises was 10%, the proportion of secondary industry was 30%, the proportion of third industry 70%, the average inflow time was 1.74 years, 54% of the floating population beyond the province and less than 2% owning houses.

4 Empirical Results and Analysis

4.1 Impact of educational experience on consumer decision-making and empirical analysis

When analyzing the impact of educational experience on consumer decision-making, this article does not directly use expenditure as an explanatory variable, mainly based on two reasons. Firstly, the direct comparability is relatively poor as the city's price level and consumption level is quite different. Secondly, income, as an important variable affecting expenditure, has a strong correlation with educational experience and other control variables, and directly adding it will affect the statistical validity of the regression equation. Many literatures also use the proportion of consumption as the main explanatory variable (Fan Jianping, 1999; Li Wenxing, 2008). This article also continues the practice of other scholars to use the proportion of total consumption and other types of consumption after food and housing expenditure to represent the consumption characteristics of

floating population. Before demonstration, the samples will be first explained and adjusted according to the sample characteristics and the actual situation.

4.2 Actual disposable income, proportion of actual disposable consumption and income grouping

In the descriptive statistics, we can see that the average income is 2375 RMB Yuan, the standard deviation is 1217 RMB Yuan, and the minimum and maximum values are 100 RMB Yuan and 10000 RMB Yuan, respectively with quite a large difference. This article takes into account that the food and rent expenditure of a considerable part of 35% samples is 0 RMB Yuan, because the employer provides employees with free accommodation and working meals. This article describes such samples as "free packet of accommodation" sample. In general, employees would be paid less wages in this condition. In the foregoing calculation of Con_ratio1 (other categories consumption proportion after deducting of accommodation costs), the income in denominator is not adjusted. Considering the work with "free packet of accommodation" may be given relatively low wages, it will result in an overestimation of the proportion of other categories of consumption.

This paper examines the proportion of "free packet of accommodation" sample in the floating population group. Using the t- test, the percentage of migrants with secondary vocational education background with "free packet of accommodation" jobs is significantly higher than the high school education group by 2.5%(Appendix table 2).In order to exclude the possible overestimation of average monthly income and con_ratio1 caused by "free packet of accommodation" sample, this paper constructs "real disposable income_cover" and "actual disposable consumption ratio of other categories con_ratio2[6]" to do the empirical analysis and ensures accuracy.

In the grouping, in order to better control income and ensure the comparability of income, this article defines the migrants whose comparable income level is less than the lowest wage income of the city as the first group (income_group=1); and migrants whose comparable income level higher than the lowest income standard, but less than the average monthly income of the city residents as the second group (income_group = 2); and migrants whose comparable income higher than the average monthly income of the city residents as the third group (income_group=3)[7]. After grouping, the characteristics of each group are detailed in Appendix Table 2. It can be seen that there are less than 3% of the total samples in Group 1, indicating that the minimum income requirement has actually played a practical role; and the sample size of Group 2 is 56.7% of the total sample, i.e. more than 1/2 of the floating population's wages are below the average monthly income

of the city; while Group 3's sample size is 41% of the total sample. The distribution of educational experience is roughly the same in different income groups, and the difference between income and actual disposable income is not significant at the 5% level of significance.

Only in the case of the first income group, after adjusting the cost of accommodation, the actual disposable income of the floating population with secondary vocational education was on average lower than the high school education of the same group by 62 Yuan and was significant at 5% significant level.

4.3 Excluding "Excess Expenditure Type" sample

From the range of values of the explanatory variables, the total consumption ratio (con_ratio) and other categories of consumption ratio after deducting the cost of food and accommodation (con_ratio1) should normally be in the range of $[0,1]$. And in practice due to various reasons (such as temporary unemployment or flow into a shorter time and other reasons), there will be a higher short-term consumer pressure, which can lead to overall consumption ratio, i.e. the proportion of consumption and other categories of more than 1. This article calls this kind of sample temporary "excess expenditure type" sample, with a total number of 312 accounting for 1.74% of the total sample (see Appendix Table 2).

Among them, the proportion of "excess expenditure type" samples of secondary vocational education is 2.13%, slightly higher than that of high school graduates, which is 1.53%. Compared with other non-"excess expenditure" samples of the same schooling background, the characteristics of the " excess expenditure type" floating population with vocational education are more different, and the overall presentation is more youthful, feminized, urban account registered, and with characteristics of intra-provincial mobility and state-owned enterprises employment . But the impact of housing and the industrial division of employment are not obvious. And removing the sample of "excess expenditure type" in the total sample has also no significant impact on the income differences within the group after income grouping. The average income of floating population in different education experiences in same income groups is basically the same.

4.4 Empirical analysis of consumption ratio and education experience

The above analysis shows that by grouping according to income, this article better controls the income level of the floating population of two different types of educational experiences within the group. After grouping, the total consumption ratio and the actual disposable consumption excluding food and accommodation are shown in the Appendix Table 2.

Take into account that the small number of observations (2% of the total sample) in the subgroups with wages less than the minimum wage in the city, and below the minimum wage also suggests that the employment status of these samples may be abnormal, empirical results in Table 2 mainly focus on the main regression results of income group 2 and income group 3.

From the regression results of the basic equations in Table 2, in the regression equation of the overall consumption ratio, we can see that the experiences of vocational education make the floating population of income group 2 significantly 0.7% higher than high school graduates of the same group in the same situation. And in the income group 3, although undergoing vocational education will increase the proportion of consumption, but the impact was not significant. In the regression equation of the real disposable consumption ratio of other categories (after excluding rent, food expenses), the experience of secondary vocational education in group 3 will significantly increase the consumption proportion of floating population by 1.4%; while in the income group 2, the positive effect of vocational education on the proportion of consumption is not significant.

At the same time, urban household registration, inflow time, intra-provincial flow, third industry employment, housing ownership can all significantly increase total consumption ratio and other categories of consumption ratio in group 2 and group 3. The positive promotion effect of urban household registration is mainly due to the wealth accumulation effect of urban household registration in China's reform and opening up (for example, the housing system reform allows urban residents to freely trade houses in their households registered place; but in rural areas, the land system provides that the agricultural population only own the land use rights for housing and arable land, ownership still belonging to the state or collective) , so the urban floating population can have higher permanent income under the same conditions, thus increasing to a certain extent the proportion of consumption in the current period. Increased flow time and intra-provincial flows can help migrants become more familiar with work and the environment, increase information symmetry, and reduce employment risks to a certain extent (Heckman 2006), which can also reduce the need for precautionary savings and increase the proportion of consumption. At the same time, the role of third employment in increasing the proportion of employment has also been verified by scholars at the macro level (Xiao Yudan, 2016), and our empirical results give an evidence of mutual promotion between the development of the third industry and the rising proportion of household consumption from a micro point of view which can be achieved through hiring more people in the third industry. Age in income group 2 has a lowering effect on the overall proportion of consumption, but in other cases its impact on the two types of consumption ratio is not significant.

The relative price level of inflow and outflow has a negative effect on consumption proportion, which is also consistent with the finding in the literature (Dustmann, 2007; Stark, 2013; Kirdar, 2005). The floating population will make more spending in relative lower-price home country or household registered land, thereby increasing overall purchasing power. While males can significantly reduce the overall consumption ratio in group 2, but having no significant effect on the proportion of actual disposable consumption in other categories .

The time effect of the equation is controlled by adding the fixed effect of the year, and the regional effect is controlled by adding the economic zone to which the inflow city belongs (southeast, central, northeast, and west).

5 Analysis of the mechanism

Judging from the regression results of the above basic equations, after controlling income differences, the whole consumption ratio of the floating population with secondary vocational education background is significantly 0.7% higher than that with high school education. After deducting rent and food expenses, there is still a similar difference in the proportion of actual disposable consumption between the two groups (vocational qualifications are 1.4% higher).

As above in this paper, after a reasonable income grouping and sample controlling for age (16 to 25 years old) , the average income levels of the two groups shows no significant difference. Therefore, in the mechanism analysis, this article mainly analyzes from the theory of preventive saving and social consumption, and focuses on the analysis of social consumption theory.

5.1 Uncertainty and Consumption – Precautionary Saving Theory

In the sample, we can observe that although there is little difference in individual characteristics between vocational school and high school graduates, there are obvious differences in the choice of employment. The proportion of vocational school graduates employed in the secondary industry is 40% on average, while the proportion of high school graduates is only 30%. In the third industry, the proportion of high school graduates is 70%, while the vocational school graduates are 60%.

Is it because the stability of different jobs in different sectors (such as term contracts signed or the insurance offered, etc.) that leads to different assessments of the uncertainty of future income, and then to different consumption? Are vocational school graduates in employment faced with less uncertainties in the future, resulting in higher current consumption? By comparing the samples, it was found that 18.7% of secondary school

graduates signed contracts with employers when employed, and the corresponding high school graduates only 16.1%. As to insurance, an average ratio of 33.28% vocational school graduates have unemployment insurance, compared with 31.74% of high school graduates; and other injury insurance and medical insurance coverage of vocational school graduates is 37% and 21.56% respectively, correspondingly high school graduates of 37% and 15.85% respectively.

By adding variables such as whether there have contracts and insurance or not, the paper examines the role of uncertainty in determining the different consumption patterns of the two types of floating population (see Appendix Table 3 for details). The empirical results show that signing contracts has no significant effect on the proportion of consumption, indicating that whether or not signing a contract during the work of the floating population has limited effect on their uncertainty in reducing employment. The coverage of various types of insurance has a significant impact on the floating population, and medical insurance (new rural cooperative medical insurance or urban residents' medical insurance) plays the most significant role in increasing the proportion of the floating population's consumption (in group 2 and 3, the average increase in proportion of total consumption was 1.6% and 1.9%, and the proportion of actual disposable consumption in other categories was increased by 5.3% and 5.6% respectively). This shows that the motive for the precautionary saving of 16 to 25-year-old migrants mainly comes from the uncertainty about the future health status. The effect of occupational injury medicine insurance on improving the actual disposable ratio of other categories is also significant, increased by 2.9% and 4.3% in group 2 and 3 respectively, further demonstrating that concerns about future physical conditions lead the young workers to increase savings rates. The effect of unemployment insurance on the proportion of total consumption is not obvious, and it has a declining effect on the proportion of other categories of consumption, decreased by 4.3% and 4.5% in group 2 and 3 respectively.

However, after controlling the difference of contract and insurance, vocational education still has a significant positive effect on the proportion of consumers (see detailed empirical results in Appendix Table 3). In group 2 vocational education experiences increase the proportion of total consumption by 1.2% and 1.5% respectively, while in group 3 vocational education experience can significantly increase the proportion of actual disposable consumption in other categories by 2.1% and 1.7%. Compared with the previous empirical results, after controlling the uncertainties of the future income and expenditure, the role of vocational education in the proportion of consumption has been further strengthened.

5.2 The influence of non-cognitive ability and social recognition on consumer behavior

The above analysis shows that after controlling the uncertainty of work and future income, vocational education can still significantly increase the proportion of the floating population's consumption. Why do different education experiences have such differences in consumer behavior?

Based on the above analysis and empirical results, this paper attempts to explain the different effects of vocational education and general education on the non-cognitive ability of floating population. It's generally believed that non-cognitive abilities include working stability, reliability, social skills, and personality traits including self-control, etc.

From the main activities of the subjects in their free time, the enthusiasm of participating in community activities, the composition of daily interactions etc. in the survey questionnaire, we can sort out some indicators to show the differences in different non-cognitive abilities. This article describes the non-cognitive ability indicators and differences in Appendix Table 4.

When assessing the difference in non-cognitive ability according to the indicators system, it can be seen that the floating population in the background of vocational education is no different from the high school graduates in optimism, sometimes even higher; and in daily life they have a stronger self- control ability and higher proportion of self-learning. Meanwhile with regard to the outward-looking index, more of them believe there is differences between themselves and local residents. The social consumption theory (Weber, 1924; Veblen, 2004; Baudrillard, 2001) argues that consumption embodies a person's social class and thus can be used as a means to obtain social identity. Is it because vocational education is much easier to feel the difference with the local people of inflow cities, so as to obtain local people's identity through consumption?

In order to verify this conjecture, this article compares the floating population with the level of consumption of the urban residents in the city, and sees whether vocational education will have a different impact on the relative consumption gap. If vocational education can significantly narrow the gap between the floating population and the urban residents' consumption levels, then we can say that the floating population during consumption is more susceptible to the influence of the urban residents' consumption, which furthermore proves that the socially recognized value of consumption does exist.

From the results(see detailed empirical results in Appendix Table 4), the vocational education experience can indeed narrow the relative gap between the floating population

and the local residents, and as the income level rises, this closer effect is even more pronounced. In group 2 (migrants' income higher than the minimum wage, but less than the local average income level), the vocational education experience can bring the relative consumption gap closer to 0.8%; while in group 3, such experience even significantly reduce the relative consumption gap of 2.3%. So the Empirical results in Table 4 demonstrate the article about the different educational experience will affect the consumer behavior by changing the non-cognitive abilities of graduates. Specifically, due to the social recognition of qualifications on the consistency and the existence of dual labor market, the floating population of high school education and vocational school education background upon graduation to enter the labor market, maintain similar features on employment type (engaged in labor-intensive industries) and salary income. However, vocational education compared to general education has raised the graduates' demand for higher social recognition, thus leading them to show a smaller gap with the level of local residents' consumption, and thus improving their proportion of consumption to a certain extent.

6 Conclusion

This article selects the secondary vocational school graduates and high school graduates in the floating population, and controls to a certain extent the differences of the number of years of education and their corresponding potential cognitive abilities. And then we combines the characteristics of the dual labor market in China to study how the vocational education relative to general education affect the characteristics of consumer behavior by changing non-cognitive ability through education.

Specifically, due to the same social recognition of qualifications and the existence of dual labor market, the floating population of high school education and vocational school education background maintain a high degree of agreement on employment type (engaged in labor-intensive industries) and salary income when they to enter the labor market after graduating. However, vocational education compared to general education, has raised the graduates' demand for higher social recognition, thus leading them to show a smaller gap with the level of local residents' consumption, and thus improving their proportion of consumption to a certain extent

Through empirical method of linear regression and t test, after controlling the individual characteristics (e.g., age, gender, residence, household registration, etc.) and income of samples, this paper finds that the consumption ratio of the floating population with vocational education background is higher with respect to that from general high school. From the perspective of precautionary savings, it's found that signing labor contracts shows little effect on reducing the precautionary savings of floating populations, but insurance (especially medical insurance and work-related injury insurance) can

significantly reduce the precautionary saving behavior of young laborers, thus illustrating one of the main motivations for the precautionary saving of floating population is the uncertainty about their future physical condition. When analyzing the difference in non-cognitive ability, this paper finds that secondary vocational school graduates do a better job in self-control ability, and mind their differences with local residents and show stronger social recognition requirements. This socially recognized demand is manifested in the fact that vocational education can significantly narrow the gap in consumption levels between migrants and local residents. Besides, this narrowing effect shows a non-linear increase in the income of migrants.

One of the directions of China's future education reform is to continue to increase expenditures and support for vocational education, but the current study on the impact of vocational education on the labor force is yet not enough. This article focuses on the influence of vocational education experience on the migrants' consumption behavior. It is an attempt to understand China's multi-level education system, being of a certain significance to deepen the understanding of the impact of education on consumer behavior in the literature, and providing new research findings and basis for further study of the social effects of vocational education, thus being of great practical significance in the promotion of education reform and improving consumer demand. Of course, this paper lacks further study in what caused such non-cognitive ability characteristics in the migrants with secondary vocational education. In the future, more comprehensive panel data should be used to carry out related further research.

References

[1] A. Ando and F.Modigliani,"The 'Life Cycle' Hypothesis of Saving: Aggregate Implications and Tests, " American Economic Review, vol.53, no.1, 1963, pp.55-84.

[2] S .Bowles and H .Gintis, "Osborne M. Incentive-Enhancing Preferences: Personality, Behavior, and Earnings," American Economic Review, vol.91, no.1, 2001, pp. 155-158.

[3] T. Bewley,"The permanent income hypothesis: A theoretical formulation," Journal of Economic Theory, vol.16, no.2, 1977, pp, 252-292.

[4] R.W. Belk and K.D. Bahn, "Mayer R N. Developmental Recognition of Consumption Symbolism," Journal of Consumer Research, vol.9, no.1, 1982, pp. 4-17.

[5] P.Bourdieu and luc Polanski, "Changes in social structure and changes in the demand for education," Routledge and Kegan Paul Press, 1977.

[6] C.D. Carroll, J.R.Overland and D.N. Weil, "Saving and growth with habit formation[C]. Board of Governors of the Federal Reserve System," 1995, pp. 341-355.

[7] C.D. Carroll, "Solving consumption models with multiplicative habits," Economics Letters, vol.68, no.1, 2000, pp. 67-77.

[8] J.S. Duesenberry, "Income, Saving and the Theory of Consumer Behavior," Review of Economics & Statistics, vol.33, no.2, 1949, pp. 111.

[9] A.Deaton,"Saving and Liquidity Constraints, " Econometrica, vol.59, no.5, 1991, pp. 1221-1248.

[10] C.Dustmann and Weiss Y, "Return Migration: Theory and Empirical Evidence from the UK," British Journal of Industrial Relations, vol.45, no.2, 2007, pp. 236–256.

[11] X,Freixas , R.Guesnerie and J.Tirole,"Planning under Incomplete Information and the Ratchet Effect," Review of Economic Studies,vol.52, no.2, 1985, pp. 173-191.

[12] M.A. Flavin, "The Adjustment of Consumption to Changing Expectations on Future Income," Journal of Political Economy, vol.89, no.5, 1981, pp. 974-1009.

[13] A. Ferrer-I-Carbonell, "Income and well-being: an empirical analysis of the comparison income effect, " Journal of Public Economics, vol.89, no.5, 2005, pp. 997-1019.

[14] J.Giles and Yoo K, "Precautionary Behavior, Migrant Networks, and Households Consumption Decisions: An Empirical Analysis Using Household Panel Data from Rural China," Review of Economics & Statistics, vol.89, no.3, 2007, pp. 534-551.

[15] H.I.Grossman and Kim M, "Human Capital and Predation: A Positive Theory of Educational Policy," Social Science Electronic, 2000.

[16] J.J.Heckman, J.Stixrud and S.Urzua ,"The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior," Nber Working Papers, vol.24, no.3, 2006, pp. 411-482.

[17] R.E. Hall, "Stochastic Implications of the Life Cycle-Permanent Income Hypothesis: Theory and Evidence," Journal of Political Economy, vol.86, no.6, 1978, pp. 971-987.

[18] L.P.Hansen and K.J. Singleton, "Generalized Instrumental Variables Estimation of Nonlinear Rational Expectations Models," Econometrica, vol.50, no.5, 1982, pp. 1269-1286.

[19] J.J. Heckman and Y.Rubinstein, "The Importance of Noncognitive Skills: Lessons from the GED Testing Program," American Economic Review, vol.91, no.2, 2001, pp. 145-149.

[20] P.Carneiro, J.J. Heckman and D.V.Masterov, "Labor Market Discrimination and Racial Differences in Premarket Factors," Journal of Law & Economics, vol.48, no.1, 2005, pp. 1-39.

[21] M. Halek and J.G. Eisenhauer, "The Demography of Risk Aversion," Journal of Risk & Insurance, vol.68, no.1, 2001, pp.1-24.

[22]Kong Mingan, "From the consumer was to sign the consumer - Baudrillard consumer culture theory," Philosophical Investigations, vol.11, 2002, pp. 68-74.

[23] M.S. Kimball "Precautionary Saving in the Small and in the Large,"Econometrica, vol.58, no.1, 1990, pp. 53-73.

[24] K.E. Dynan,"How Prudent are Consumers,"Journal of Political Economy, Vol. 101, No. 6, 1993, pp. 1104 – 1113.

[25] M.G. Kirdar,"Return Migration and Saving Behavior of Foreign Workers in Germany," Erc Working Papers, 2005.

[26] H.E. Leland, "Saving and Uncertainty: The Precautionary Demand for saving," Uncertainty in Economics, vol.82, no.3, 1978, pp. 465-473.

[27]Max Weber, "Economy and Society," Business Press, 1987.

[28] M.R, Rosenzweig and O. Stark, "Consumption Smoothing, Migration, and Marriage: Evidence from Rural India," Journal of Political Economy, vol.97, no.4, 1989, pp. 905-926.

[29] M.Spence, "Job Market Signaling," Quarterly Journal of Economics, vol.87, no.3, 1973, pp. 355-374.

[30] O.Stark and A.Dorn, "International migration, human capital formation, and saving," Economics Letters, vol.118, no.3, 2013, pp. 411-414.

[31] J.E. Taylor and P.L. Martin, "Chapter 9 Human capital: Migration and rural population change," Handbook of Agricultural Economics, vol.1, no,1 2001, pp. 457-511.

[32] T.Veblen, "The theory of the leisure class: an economic study of institutions," Dover Publication, 1944.

[33] J.L. Zagorsky, "Do you have to be smart to be rich? The impact of IQ on wealth, income and financial distress," Intelligence, vol.35, no.5, 2007, pp. 489-501.

[34] Chen Shangcong and Fan Yiyang, "Research on the Relationship between Advanced Consumption and Social Acceptance," Journal of Logistics Technology, vol.40, no.9, 2017, pp. 97-99.

[35] Chu Qinghua,"Wage differentials within rural migrant workers," Journal of Chongqing University (Social Science Edition), vol.6, 2016, pp.10 - 21.

[36] Hu Ruochi, "The consumption guidance of urban and rural residents from the perspective of stratification in China," Consumer Economics, vol.1, 2012, pp. 17-20.

[37] Huang Guoying and Xie Yu, "The Influence of Cognitive Ability and Non-cognitive Ability on the Return of Young Labor Income," Chinese Youth Studies, vol.2, pp.56-64.

[38]Lou Feng and Li Xuesong, "Dynamic consumer demand empirical analysis of urban residents in China," Chinese Social Sciences, vol.3, 2009, pp. 109-115.

[39]Liu Yanzi, Hou Rui and Chen Jin, "Research on the Impact of Population Education Level on Residents' Consumption —— Based on Dynamic Panel Quantile Regression, " Northwest Population" , vol.38, no.1, 2017, pp. 50-56.

[40] Li Wenxing, Xu Changsheng and Ai Chunrong," Age Structure and Resident Consumption of Chinese Population: 1989-2004," Economic Research, vol.7, 2008, pp. 118-129.

[41]Liu Jianmin, Ouyang Jun and Jin Yun exchange,"Consumption behavior of Chinese residents in rational expectations tests," Quantity Technical Economics, vol.20, no, 11, 2003, pp. 55-59.

[42]Liu nina and Zhang Rufei, "Research on family consumption level and consumption structure of new generation floating population,"Consumer Economics, vol.6, 2013, pp. 31-34.

[43]Feng Hong and LI Chenxi, "An Analysis of the Elements Affecting rural-urban Migrant Workers' Consumption in the New Urbanization Process———A Case Study Based on Chinese Migrants Dynamic Monitor in 2013," Journal of Beijing Union University (Humanities and Social Sciences), vol.14, no.3, 2016, pp.72-80.

[44] Peng Wenping, "Excessive Sensitivity of Consumption Hypothesis and Its Application in China," Contemporary Finance & Economics, vol.3, 2001, pp. 59-61.

[45]Wan Guanghua, Shi Qinghua and Tang Sumei, "Saving behaviors of rural households in transitional economy: An empirical study of rural areas in China, " Economic Research, vol.5, 2003, pp.181-201.

[46]Wang Man, "Behavior and strategy choice of migrant workers in Beijing," Journal of Beijing Technology and Business University (Humanities and Social Sciences), vol.19, no.3, 2004, pp. 37-39.

[47]Su Zhixia,"A preliminary study of the "consumption" function of the floating population," Consumer Economics, vol.3, 1999, pp. 23-25.

[48]Song Xie,"A Study on Chinese Residents' Saving Behavior". Financial Research, Issue 9, 1999.

[49]Shen Park and Liukang Bing, "Chinese consumption behavior of urban residents excessive sensitivity of empirical research - Also on the uncertainty, liquidity constraints and interest rates," Chinese economic issues, vol.6, 2002, pp. 39-45.

[50]Tan Suhua, Zhu Yu and Lin Liyue, "A study on the urban consumption of the floating population's families and its determinants: evidence from the national floating populations' dynamic monitoring survey," Population and Development, Vol.10, no.1, 2015, pp.22-31.

[51]Xu Jing,"Comparative Study of Rural Consumption Behaviors - the perspective of permanent income hypothesis," China Science and Technology Information, vol.21, 2005, pp. 12-12.

[52]Yang Cuiying and Wang Runquan,"The impact of urban social security on consumption," =Economic Studies of Shanghai, vol.12, 2016, pp. 97-104.

[53] Ye Chunhui, Feng Jin and Wang Xiaorun, " Income, Education Level and Medical Consumption: An Analysis Based on Microdata of Rural Households, " Rural Economy of China, vol.8, 2008, pp.16-24.

[54]Zhou Hong, "Empirical Study on the Relationship between Human Capital and Family Consumption from the Perspective of Family Finance: A Survey from CFPS," Economic Survey, vol.6, 2011, pp.16-20.

[55] Zhou Jian and Yang Xiuzhen, "Research on the Changes of Rural Consumer Behavior and the Linkage Mechanism between Urban and Rural Areas in China," Economic Research, vol.1, 2009, pp. 83-95.

Appendix

Table 1 Variable Definitions and Descriptive Statistics

Panel A Variable Definition

variable	definition
Mainly explained variable	
Con_ratio/ con_ratio1 / con_ratio 2	Monthly household income ratio Con_ratio=cost_m/income_m Con_ratio 1 ==(cost_m-rent_m-food_m)/income_m Con_ratio 2 =(cost_m-rent_m-food_m)/(income_m-rent_m-food_m)
condif_ratio	The gap between household monthly per capita expenditure and per capita expenditure in the city is calculated based on data from the National Health and Family Planning Commission's floating population survey and the city's per capita consumption level (city _cst) announced by the National Bureau of Statistics of China . Condif_ratio=(con_per-rent_m- city _cst)/ city_cst
Main explanatory variables	
Edu_exp	According to the person completing the questionnaire educational qualifications of measure . Edu_exp is a dummy variable, in which the floating population of secondary education is defined as " edu_exp=1 " and the floating population of high school education is defined as "edu_exp=0" .
Major control variable	
Age	age
Gender	Gender - dummy variable: 1 for males and 0 for females
Mar_status	Marital status - dummy variable: 1 in marriage status , otherwise 0

Acc_nature	Account type - dummy variable: urban household registration is 1, otherwise 0
Employ_unit	Employment status - dummy variable: the employment unit is 1 for the company, otherwise 0
Employ_soe	Employment unit - dummy variable: State-owned enterprise is 1, otherwise 0
Whe_2ind	Employment industry - dummy variable: 1 for the secondary industry, 0 otherwise
Whe_3ind	Employment industry - dummy variable: 1 for the tertiary industry, 0 otherwise
Flo_dur	Surveyer's current flow duration
Flo_rage	Flow range - dummy variable: flow in the province is 1, otherwise 0
House_own	House owned - dummy variable: 1 in the house owned locally, otherwise 0
Price_indx	Consumer prices relative to the inflow and outflow of: PR ice_indx = inflow provinces CPI / outflow CPI , the year before the equation using the relative CPI prices
Other variables	
Cost_m	Total monthly household expenditure: according to survey questions " your home in how much money the local total expenditure per month (cost_m) " and " How much of your total monthly household income in local (income_m) " to build
income_m	Monthly household gross income: According to the questionnaire question " How much is your home's total monthly local income? "
Rent_m	Monthly household rent expenditure: according to survey questions " your home in the local monthly rent of how much money expenditure (rent_m) " to get
Food_m	Monthly household food expenditure: according to survey questions " your home in the local food a month how much money expenditure (food_m) " to get

Panel B Descriptive Statistics of Main Variables

The table presents descriptive statistics for each variable. Monthly household income ratios include: con_ratio, con_ratio 1, con_ratio2, where con_ratio is the total consumption ratio, and the con_ratio1, con_ratio2 represent the consumption ratios of certain categories (excluding the food and rent cost). ratio_dif is calculated as ratio between the gap of household monthly per capita expenditure and per capita expenditure in the city and per capita expenditure in the city, based on data from the National Health and Family Planning Commission's floating population survey and the city's per capita consumption level (city_cst) announced by the National Bureau of Statistics of China.

Variable name	Variable definitions	N	Mean	St.dev.	Min	Max
con_ratio	Average monthly expenditure	17,897	0.57	0.20	0.023	10
con_ratio1	Average monthly income	17,897	0.21	0.20	0	7.48
con_ratio2	Average monthly rent	17,897	0.31	0.60	(30)	17
Ratio_dif	Average food expenditure	16,356	(0.40)	0.36	(-.97)	3.90
Cost_m	Average monthly expenditure	17,897	1271	715.9	50	20001
Income_m	Average monthly income	17,897	2375	1217	100	10000
Rent_m	Average monthly rent	17,897	255.1	305.7	0	8000
Foodcost_m	Average food expenditure	17,897	558.6	364.0	0	5000
City_cst	Average monthly expenditure of urban residents	16,356	1839	697.8	691.7	3721
City_revn	Average monthly expenditure of urban residents	16,356	2271	678.4	885.3	3721
Edu_exp	Education experience	17,897	0.39	0.49	0	1
Age	age	17,897	21.8	2.11	16	25
Gender	gender	17,897	0.52	0.50	0	1
Acc_ nature	Nature of residence	17,897	0.14	0.35	0	1
Unit_soe	Whether the employment unit is a state-owned enterprise	17,897	0.10	0.30	0	1
Unit_whe	Is it unit employment?	17,897	0.64	0.48	0	1

Whe_2ind	Is employment the second industry	17,897	0.30	0.46	0	1
Whe_3ind	Is employment the third industry	17,897	0.69	0.46	0	1
Flo_dur	This inflow duration	17,897	1.73	1.90	0	23
Flo_ rage	Inflow range	17,897	0.54	0.50	0	1
House_ own	Do you own a house?	17,897	0.018	0.13	0	1
Price_ indx	Change in price of inflows/change in price of outflows	17,897	0.96	0.35	(6.50)	5.75

Table 2 According to income grouping, sample adjustment, and empirical regression

Panel A Observational Samples after Dividing into Different Income Groups

Income Group	**Obs .**		**Frequency**		**Income_mean**	
	Edu_exp =0	Edu_exp =1	Edu_exp =0	Edu_exp =1	Edu_exp =0	Edu_exp =1
1	288	179	2.63 %	2.58 %	866.18	846.32
2	6,124	4,020	55.85 %	58.00 %	1955.59	1938.67
3	4,553	2,733	42.52 %	39.43 %	3069.95	3055.09

Panel B Discrepancies in income within groups in different floating populations after income grouping

Average income difference	**Obs**	**Mean**	**Std. Err.**	**T-value**
0 (edu_exp =0)	10,965	2389.69	11.80	
1 (edu_exp =1)	6,932	2350.62	14.27	
Diff (mean1– mean0)		(39.07) **	18.51	t = (2.11)

	Income group	Obs	**Mean**	**Std. Err.**	**T-value**
Average income difference (mean1 – mean0)	1	467	(19.85)	19.50	(1.01)
	2	10,144	(16.92)	14.76	(1.14)

	3	7,286	(14.85)	34.06	(0.43)

Comparable income mean difference	**Obs**	**Mean**	**Std. Err.**	**T-value**
0 (edu_exp =0)	10,965	1566.68	9.75	
1 (edu_exp =1)	6,932	1546.00	11.97	
Diff (mean1– mean0)		(20.68)	18.51	t = (1.33)

	Income grouping	**Obs**	**Mean**	**Std. Err.**	**T-value**
Comparable income mean difference (mean1 – mean0)	1	467	(62.27) **	28.14	(2.21)
	2	10,144	(16.22)	12.86	(1.26)
	3	7,286	18.83	28.95	0.65

Panel C Differences in the mean values of various types of characteristics of the "excess expenditure type" sample and the overall sample

	Edu_exp		**Percent**
Group	0	1	
Con_ratio >1	207	172	1.78%
Con_ratio <=1	12,739	8,151	98.22%

Group	**M ean Diffence**							
Variables	Age	Gender	Acc_nature	Flo_rage	Unit_soe	Whe_3ind	Whe_2ind	House_own
(edu =0)	(0.39)	0 .03	0.05***	0.035	0.072	0.13***	(0.13)***	0.022***
(edu =1)	(0.54)***	(0.11)***	0.085***	0.10***	0.093***	0.069*	(0.07)*	(0.005)

* p< 0.05, ** p<0.01, *** p<0.001

Panel D Differences in the mean values of various types of characteristics of " contained food and lodging" sample in different education groups - t test

Group	**Obs**	**Mean**	**Std. Err.**	**T-value**

0 (edu_exp =0)	13,070	0.336	0 .004	
1 (edu_exp =1)	8,463	0.37 1	0 .005	
Diff(mean1 – mean0)		0.035 ***	0.007	t = 5.22

* p< 0.05, ** p<0.01, *** p<0.001

Panel E Empirical Results after Grouping by Income

The table presents the empirical result of education experience and consumption ratio. This paper defines the migrants whose comparable income level is less than the lowest wage income of the city as the first group (income group=1); and migrants whose comparable income level higher than the lowest income standard, but less than the average monthly income of the city residents as the second group (income group = 2); and migrants whose comparable income higher than the average monthly income of the city residents as the third group (income group=3). The dependent variables are Total consumption ratio (con_ratio==cost_m/income_m), and actual comparable ratio of consumption excluding the food and rent cost (con_ratio2= (cost_m-rent_m-food_m)/ (income_m-rent_m-food_m)).The main independent variable edu_exp is defined to be 1 if graduated from a secondary vocational school, and 0 if from a general high school.

	Total consumption ratio Con_ratio			Actual comparable ratio of consumption (excluding food and rent cost) Con_ratio2		
	Income group 1	Income group 2	Income group 3	Income group 1	Income group 2	Income group 3
Edu_exp	0.018	0.007 *	0.008 *	0.025	0.005	0.015 ***
	(0.79)	(1.78)	(1.67)	(0.75)	(0.96)	(2.91)
Age	0.000	0.002 **	0.001	-0.009	-0.004 ***	-0.002 *
	(0.03)	(2.25)	(1.19)	(-1.16)	(-3.64)	(-1.83)
Gender	0.003	-0.011 ***	-0.001	0.024	-0.008	-0.004
	(0.14)	(-2.86)	(-0.23)	(0.71)	(-1.58)	(-0.84)
Acc_nature	0.008	0.022 ***	0.034 ***	-0.037	0.019 ***	0.021 ***
	(0.23)	(3.69)	(5.61)	(-0.73)	(2.65)	(3.04)
Flo_dur	-0.016 **	0.003 ***	0.002	-0.020 *	0.004 ***	0.001
	(-2.00)	(3.14)	(1.48)	(-1.71)	(2.84)	(0.46)
Flo_rage	-0.008	0.047 ***	0.040 ***	-0.038	0.052 ***	0.043 ***
	(-0.34)	(11.62)	(8.89)	(-1.08)	(10.28)	(8.33)
Price_indx	0.017	-0.010 *	-0.026 ***	0.006	-0.025 ***	-0.049 ***
	(0.93)	(-1.83)	(-4.07)	(0.25)	(-3.54)	(-6.79)
Unit_soe	0.021	0.009	0.012	0.031	0.005	-0.004
	(0.42)	(1.21)	(1.58)	(0.42)	(0.54)	(-0.48)
Unit_whe	0.054 **	-0.012 ***	-0.004	0.026	0.006	0.012 **
	(2.25)	(-2.60)	(-0.73)	(0.74)	(1.12)	(2.07)
Whe_3ind	-0.199	0.057 *	0.065 *	-0.056	0.060	0.011
	(-0.89)	(1.65)	(1.88)	(-0.17)	(1.37)	(0.27)
House_own	-0.110 *	0.001	-0.005	-0.092	0.090 ***	0.110 ***

	(-1.66)	(0.08)	(-0.30)	(-0.97)	(4.44)	(6.40)
C	0.870 ***	0.477 ***	0.431 ***	0.741 **	0.364 ***	0.334 ***
	(3.47)	(11.64)	(10.13)	(2.04)	(7.10)	(6.96)
Time effect	control	control	control	control	control	control
Regional effect	control	control	control	control	control	control
Observing the number of samples	393	9983	7322	393	9983	7322
R^2	0.049	0.051	0.057	0.030	0.025	0.029

t statistics in parentheses

* p< 0.05, ** p<0.01, *** p<0.001

Table 3 Preventive savings theory

Panel A signed contract of species

Contracts	Edu_exp ==0		Edu_exp ==1	
	Obs	Percent (%)	Obs	Percent (%)
There is a fixed period	1,743	13.81	1,405	17.36
No fixed deadline	288	2.28	109	1.35
Complete a one-time task	36	0.29	11	0.13
Probation	166	1.32	135	1.67
Unsigned labor contract	1,558	12.35	822	10.15
Unclear	112	0.89	75	0.93

Panel B insurance coverage

Insurance	Edu_exp ==0		Edu_exp ==1	
	Obs	Percent (%)	Obs	Percent (%)
medical insurance	4692	37	2993	36.97
Injury insurance	1999	15.85	1745	21.56
Unemployment insurance	4004	31.74	2694	33.28

Panel C Can Contract signing reduce the effect of precautionary saving incentives?

The table presents the empirical result of Contract signing and consumption ratio in different income group. This paper defines the migrants whose comparable income level is less than the lowest wage income of the city as the first group (income group=1); and migrants whose comparable income level higher than the lowest income standard, but less than the average monthly income of the city residents as the second group (income group = 2); and migrants whose comparable income higher than the average monthly income of the city residents as the third group (income group=3). The dependent variables are Total consumption ratio (con_ratio==cost_m/income_m), and actual comparable ratio of consumption excluding the food and rent cost (con_ratio2= (cost_m-rent_m-food_m)/ (income_m-rent_m-food_m)).The main independent variable edu_exp is defined to be 1 if graduated from a secondary vocational school, and 0 if from a general high school. Contract measure whether the worker have assigned a labor contract with the employer (1=sign a contract; 0=sign no contract).

	Total consumption ratio Con_ratio			Actual comparable ratio of consumption (excluding food and rent cost) Con_ratio2		
	Income group 1	Income group 2	Income group 3	Income group 1	Income group 2	Income group.3
Edu_exp	0.028	0.012 *	0.009	0.036	0.011	0.021 **
	(0.86)	(1.82)	(1.06)	(0.86)	(1.42)	(2.35)
Contract	-0.023	-0.010	-0.010	-0.013	-0.005	-0.009
	(-0.69)	(-1.49)	(-1.21)	(-0.30)	(-0.58)	(-0.93)
Age	-0.004	0.002	0.001	-0.023 **	-0.003 *	-0.002
	(-0.48)	(1.51)	(0.33)	(-2.18)	(-1.67)	(-0.93)
Gender	-0.019	-0.008	0.003	0.008	-0.004	-0.007
	(-0.59)	(-1.15)	(0.44)	(0.19)	(-0.57)	(-0.74)
Acc_nature	0.003	0.020 **	0.034 ***	-0.104	0.024 **	0.018
	(0.05)	(2.04)	(3.27)	(-1.64)	(2.15)	(1.55)
Flo_dur	-0.014	0.006 ***	0.006 ***	-0.022	0.007 ***	0.005 **
	(-1.09)	(3.55)	(3.21)	(-1.30)	(3.32)	(2.33)
Flo_rage	-0.001	0.042 ***	0.029 ***	-0.051	0.042 ***	0.023 **
	(-0.04)	(5.92)	(3.48)	(-1.17)	(5.13)	(2.52)
Price_indx	0.021	-0.006	-0.010	0.011	0.006	-0.011
	(0.95)	(-0.97)	(-1.21)	(0.39)	(0.87)	(-1.24)
Unit_soe	-0.004	0.003	-0.004	-0.088	-0.011	-0.011
	(-0.06)	(0.31)	(-0.36)	(-0.88)	(-0.85)	(-0.86)
Unit_whe	0.093 ***	0.006	-0.002	0.110 **	0.023 **	-0.003
	(2.80)	(0.76)	(-0.16)	(2.56)	(2.54)	(-0.22)
Whe_3ind	0.135 ***	0.054 ***	0.084 ***	0.121 *	0.050 ***	0.048 ***
	(2.69)	(6.80)	(9.25)	(1.86)	(5.49)	(4.80)
House_own	-0.093	-0.000	-0.049	-0.078	0.076 ***	0.051
	(-1.31)	(-0.02)	(-1.39)	(-0.85)	(2.93)	(1.31)

C	0.607 ***	0.535 ***	0.532 ***	1.123 ***	0.623 ***	0.578 ***
	(3.19)	(14.67)	(11.36)	(4.56)	(14.92)	(11.12)
Time effect	*control*	*control*	*control*	*control*	*control*	*control*
Regional effect	*control*	*control*	*control*	*control*	*control*	*control*
Observing the number of samples	237	3626	2257	237	3626	2257
R^2	0.087	0.065	0.093	0.146	0.166	0.151

t statistics in parentheses

* p< 0.05, ** p<0.01, *** p<0.001

Panel D the Use of Insurance to Reduce Precautionary Saving Motivation

The table presents the empirical result of Contract signing and consumption ratio in different income group. This paper defines the migrants whose comparable income level is less than the lowest wage income of the city as the first group (income group=1); and migrants whose comparable income level higher than the lowest income standard, but less than the average monthly income of the city residents as the second group (income group = 2); and migrants whose comparable income higher than the average monthly income of the city residents as the third group (income group=3). The dependent variables are Total consumption ratio (con_ratio==cost_m/income_m), and actual comparable ratio of consumption excluding the food and rent cost (con_ratio2= (cost_m-rent_m-food_m)/ (income_m-rent_m-food_m)).The main independent variable edu_exp is defined to be 1 if graduated from a secondary vocational school, and 0 if from a general high school. Medical insurance measure whether the worker have a medical insurance (1=have one kind of medical insurance at least; 0= have no medical insurance). Injury insurance measure whether the worker have an injury insurance (1=have one kind of injury insurance at least; 0= have no injury insurance). Unemployment insurance measure whether the worker have an unemployment insurance (1=have one kind of unemployment insurance; 0= have no unemployment insurance).

	Total consumption ratio Con_ratio			Actual comparable ratio of consumption (excluding food and rent cost) Con_ratio2		
	Income group 1	Income group 2	Income group 3	Income group 1	Income group 2	Income group 3
Edu_exp	0.025	0.015 ***	0.009	0.039	0.012 *	0.017 **
	(0.79)	(2.65)	(1.44)	(0.97)	(1.68)	(2.25)
medical insurance	-0.040	0.016 **	0.019 **	-0.054	0.053 ***	0.056 ***
	(-0.96)	(2.08)	(2.07)	(-1.02)	(5.83)	(5.37)
Injury insurance	-0.096	-0.015 *	0.003	-0.083	0.029 ***	0.043 ***
	(-1.37)	(-1.69)	(0.32)	(-0.92)	(2.66)	(3.93)

Unemployment insurance	0.089	0.002	-0.005	0.076	-0.043 ***	-0.045 ***
	(0.89)	(0.20)	(-0.40)	(0.60)	(-3.36)	(-3.43)
Age	-0.006	0.003 **	0.001	-0.024 **	-0.002	-0.002
	(-0.81)	(2.26)	(0.45)	(-2.40)	(-1.02)	(-1.11)
Gender	-0.026	-0.006	0.007	-0.007	-0.006	-0.004
	(-0.82)	(-1.09)	(1.04)	(-0.18)	(-0.88)	(-0.61)
Acc_nature	0.017	0.018 **	0.037 ***	-0.089	0.031 ***	0.018 *
	(0.34)	(2.17)	(4.29)	(-1.40)	(3.00)	(1.82)
Flo_dur	-0.021 *	0.006 ***	0.006 ***	-0.026 *	0.006 ***	0.005 ***
	(-1.71)	(3.68)	(3.51)	(-1.68)	(3.25)	(2.78)
Flo_rage	-0.010	0.041 ***	0.044 ***	-0.052	0.049 ***	0.037 ***
	(-0.30)	(6.75)	(6.70)	(-1.26)	(6.70)	(5.07)
Price_indx	0.011	-0.007	-0.017 ***	0.005	-0.010	-0.030 ***
	(0.55)	(-1.15)	(-2.58)	(0.18)	(-1.37)	(-4.01)
Unit_soe	0.000	0.012	0.011	-0.078	-0.001	0.002
	(0.01)	(1.22)	(1.14)	(-0.80)	(-0.12)	(0.16)
Unit_whe	0.086 ***	0.006	0.002	0.100 **	0.028 ***	0.017 *
	(2.68)	(0.76)	(0.19)	(2.47)	(3.21)	(1.83)
Whe_3ind	0.087 *	0.046 ***	0.073 ***	0.054	0.031 ***	0.040 ***
	(1.66)	(6.67)	(9.26)	(0.81)	(3.77)	(4.53)
House_own	-0.057	-0.011	-0.004	-0.051	0.059 **	0.121 ***
	(-0.83)	(-0.52)	(-0.17)	(-0.59)	(2.39)	(4.89)
C	0.757 ***	0.470 ***	0.449 ***	1.242 ***	0.404 ***	0.355 ***
	(3.80)	(15.18)	(12.03)	(4.91)	(10.84)	(8.41)
Time effect	*control*	*control*	*control*	*control*	*control*	*control*
Regional effect	*control*	*control*	*control*	*control*	*control*	*control*
Observing the number of samples	259	4841	3477	259	4841	3477
R^2	0.085	0.056	0.083	0.143	0.090	0.088

t statistics in parentheses

* p< 0.05, ** p<0.01, *** p<0.001

Table 4 Non-cognitive Ability, Social Recognition Demand and Consumption Decisions

Panel A Index and Non-cognitive Ability Mean Differences(t-test)

The table presents the index measuring the non-recognition ability of floating youth workers with vocational education background and general high school education background. The optimistic indicator is measured according to the questionnaire question 'do you feel happier in the city', and we defined the indicator equal to 1 if the answer is "yes", 0

if “no”. The self-control ability is measured according to the questionnaire questions, like ‘what do you do in your spare time?’ and “Do you have the habit to play game in the internet?”, “Do you smoke?”, “Do you reading and study in home?” and so on. We defined “play game” /“smoking” /“Self-learning” as 1 if the worker has the habits of playing game, smoking or reading and studying, as 0 if have no such habits. The Export-oriented indicators measure the preferences and participation with local people according to the questionnaire questions, like ‘who do you contact with in your life here?’ and “Do you think you are different from the local people?”, “Do you feel the local people is friendly?”, “Have you ever took part in the community activities, such as the health education, election, charity activities?” and so on. We defined “communicate with local people” /“Think no difference with local people” /“Participate in community activities” as 1 if the worker has the preferences to communicate with local people, or they think they are no difference with local people, or they have the experience of participating in the community activities, and as 0 if they do not contact with the local people, or they always think themselves different from local people or have not took part in any community activities. Then we presents t test result for the mean comparisons of those non-recognition ability indices for floating youth workers with vocational education background and general high school education background.

index	**Optimistic indicator**	**Self-control ability**			**Export-oriented indicators**		
	Do you feel happier?	Play games	Smoking	Self-learning	communicate with local people	Think no difference with local people	Participate in community activities
edu_exp =0	0 .5 4	0 .30	0 .24	0 .38	0 .09	0 .48	0 .5 7
edu_exp =1	0.56	0 .29	0 .23	0 .44 ** *	0 .09	0 .4 5***	0 .55

Panel B The Influence of Educational Experience on Consumer Behavior——Society Recognition Demand

The table presents the empirical result of education experience and consumption gap ratio with local people in different income group. This paper defines the migrants whose comparable income level is less than the lowest wage income of the city as the first group (income group=1); and migrants whose comparable income level higher than the lowest income standard, but less than the average monthly income of the city residents as the second group (income group = 2); and migrants whose comparable income higher than the average monthly income of the city residents as the third group (income group=3). The dependent variable is condif_ratio, measuring the gap between household monthly per capita expenditure and average per capita expenditure of citizen in the city. Condif_ratio is calculated based on data from the National Health and Family Planning Commission's floating population survey and the city's per capita consumption level (city_cst) announced by the National Bureau of Statistics of China(condif_ratio =(con_per-rent_m- city _cst)/ city_cst).The reason of subtracting rent costs is considering the fact that local residents have a very high level of house ownership, so the hidden rent can be calculated as 0. The consumption of local residents is mainly reflected in the

consumption expenditures other than the rent cost; therefore if the floating population does not reduce the rent, it may reduce the comparability.

	The relative ratio of floating population and local residents' consumption gap Condif_ratio		
	Income group 1	Income group 2	Income group 3
Edu_exp	0.016	0.008 *	0.023 **
	(0.76)	(1.79)	(2.17)
Age	0.002	0.003 ***	0.003
	(0.49)	(2.90)	(1.15)
Gender	0.005	0.021 ***	0.064 ***
	(0.22)	(4.57)	(6.08)
Acc_nature	0.028	0.021 ***	0.075 ***
	(0.92)	(3.10)	(5.30)
Flo_dur	-0.008	0.006 ***	0.008 ***
	(-1.06)	(4.43)	(3.24)
Flo_rage	-0.004	0.068 ***	0.057 ***
	(-0.18)	(14.50)	(5.45)
Price_indx	0.024	-0.007	-0.006
	(1.53)	(-0.99)	(-0.38)
Unit_soe	-0.039	0.015 *	0.087 ***
	(-0.82)	(1.82)	(5.14)
Unit_whe	0.064 ***	0.004	-0.057 ***
	(2.98)	(0.69)	(-4.80)
Whe_3ind	-0.215	0.057	0.097
	(-1.10)	(1.22)	(1.23)
House_own	0.007	0.148 ***	0.399 ***
	(0.11)	(7.53)	(11.20)
C	-0.458 **	-0.713 ***	-0.471 ***
	(-2.09)	(-13.57)	(-4.84)
Time effect	*control*	*control*	*control*
Regional effect	*control*	*control*	*control*
Observing the number of samples	361	8777	7218
R^2	0.060	0.042	0.047

t statistics in parentheses

* p< 0.05, ** p<0.01, *** p<0.001

[1] According to the regulations of the Ministry of Education of PRC, vocational school education and high school education are collectively referred to as "high school graduates or graduates with the same qualifications" and can apply to participate in the general college entrance examination. In fact they are often viewed equally in labor market.

[2] Heckman (2001, 2005, 2006) believes that the cognitive ability of the workforce (ability of mathematics and calculations, vocabulary and sentence comprehension) and non-cognitive ability (job stability, reliability, social skills, etc.) all have a significant impact wages and future achievements. General education focuses more on the training of students' cognitive ability, and vocational education pays more attention to the training of job skills and social skills.

[3] The dual labor market theory holds that there is a primary sector and a secondary sector. The former mainly includes government agencies, education and scientific research institutions, or large corporations that allow human capital to be properly evaluated. The latter is composed of Informal SMEs with relatively low wages, relatively poor welfare, and unstable employment.

[4] Graduates who choose to study at a vocational high school or a technical vocational school select vocational education in advance because they are not expected to enter the university, while graduates who have chosen to attend a high school but fail to enter the university are actually unable to attend college. Statistically, it can be considered that there is little difference between the two situations.

[5] Although this article demonstrates the consistency of potential cognitive ability between the two types of graduates through empirical facts, but to this extent, the existence of dual labor market also limits the ability to use cognitive resources in human resources, making non-cognitive ability play a leading role.