Research on the Factors Affecting the Consumption Level of Migrant Workers

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\textbf{Abstract:} The role of consumption is gaining prominence under the robust boost of economy, making it pivotal to release the consumption potential of farmer workers. Since parts related to employment quality, which would trigger the strong mobility and poor income stability, will probably affect the consumption level, the relationship between employment quality and consumption level of farmer workers seems crucial. Therefore, this article is aimed at researching the effect on consumption level of migrant farmer workers put by employment quality, as well as some other controlled variables and cities’ developmental differences, through OLS method. Through researching, the employment quality are found to improve the consumption level of farmer workers. Also, higher degree of urban development would pose higher consumption level. At last, suggestions are given to improve the consumption level of migrant farmer workers.

\textbf{Keywords:} Employment Quality, Consumption Level, Migrant Farmer Workers, OLS

1. Introduction

China has entered a new stage where the economy is booming in high quality. Consumption is key to accelerating this stage. After the 14th Five-Year Plan, “unimpeded domestic circulation, comprehensively support for consumption and stimulation for human consumption potential” has been one of the national priorities. Meanwhile, the massive quantity of farmers\textsuperscript{1} and their rocketing income\textsuperscript{2} enables them with more space to uplift consumption level than others. Therefore, studying factors that will affect the consumption level of farmer workers is of significance, as for further economic development.

Besides, income is the base of consumption. On the one hand, farmer workers are low-wage takers for their incompetence in superior vocational skills. On the other hand, additional disadvantages faced by farmer workers like shabby working environment, low labor contract signing rate, and etc, will pose higher job mobility, thereby diminishing their consumption desire by affecting the stability of income. Thus, employment quality, as a comprehensive indicator reflecting the employment

\footnotesize{\textsuperscript{1} In 2021, the total number of migrant workers in China will be 292.51 million, up 2.4 percent year-on-year”-National Rural Revitalization Bureau.}

\footnotesize{\textsuperscript{2} In 2021, the nominal growth and actual growth of per capita disposable income of rural residents are 10.5 % and 9.7 % respectively, which are faster than that of urban residents by more than 2 percentage points. ”-National Rural Revitalization Bureau.}
status of farmer workers in the floating population, has become a primal variable in researching their consumption level.

Moreover, there are significant unbalanced progress between cities. Hence, it’s also meaningful to check out whether the consumption level of farmer workers have city differences and whether such differences will affect consumption level together with employment quality.

Therefore, this paper hopes to provide reference for improving the consumption level of farmers and expanding internal demand nationally through the study of the three main issues above.

The following structures are as follows: The second part is the literature review, the third part is about the research methods and the data declaration, the fourth part is the empirical analysis, the fifth part is the summary and the suggestion, and the final is for conclusion.

2. Literature Review

There already exist bountiful recent studies related to the impact of employment quality on farmer workers: Jiang Chunyun, from the perspective of “subjective well-being”, found that the improvement of employment can dramatically increase the sense of happiness among farmer workers [1]; Xie Yating, from the perspective of “willingness to settle down”, found that the poor employment quality makes it less strong for farmer workers to reside in urban areas [2]. Liu Lili used “whether the labor contract is signed” to represent employment stability, and tried to find its effect on the consumption level of farmer workers [3]. Hu Binhong investigated the impact of farmer quality of farmer workers on their children’s accompanied migration, and concluded that the enhancement of employment quality of farmer workers can increase the their children’s accompanied migration rate by ensuing better caring ability and housing conditions [4].

Although relevant literature is various, few of them are related to the relationship between employment quality and the consumption level of farmer workers. Plus, indicators of employment quality are mainly from one angle, and data hasn’t been through heteroscedasticity test and modification.

In view of these, this paper tries to make some contributions as follows: First, the research object is shifted from farmer workers to farmer workers in the floating population. Second, the indicator of employment quality is comprehensive. Third, according to the unbalanced characteristics of urban development, this paper will further study whether the city differences influence the consumption level of farmer workers and whether it will meanwhile influence the relationship between employment quality and consumption level.

3. Research Methods and Data Declaration

3.1. Research Methods

This paper will use the OLS analysis method. Model will be constructed, which feasibility is assured by correlation coefficients test, to study the factors that will influence the consumption level of farmer workers. Then, in order to ensure the validity of the model, it will be optimized through coefficient significance test, model-fitting text, heteroscedasticity test and modification.

3.2. Data Declaration

Data Source. The factors included in the quality of employment will affect the mobility of farmer, so all the data in this paper are from the “National Health and Family Planning Detection Survey of Floating Population in 2018”. In terms of sample selection, this paper first defined the observational objects as farmer in “household registration”. The following are some questions listed for understanding the classification of dummy variables:
I. Gender (1 male, 2 female)
II. Nature of household registration (1 Agriculture, 2 Non-agricultural, 3 It is now uniformly registered as a resident and was formerly an agricultural enterprise, 4 It is now uniformly registered as a resident and was previously non-agricultural, 5 resident, 6 others)
III. Marital status (1 unmarried, 2 first marriage, 3 remarriage, 4 divorce, 5 widow, 6 cohabitation)
IV. Scope of this flow (1 inter-provincial, 2 inter-city within the province, 3 across counties in the city, 5 Cross border)
V. What is the nature of your present work? (1 government agencies and institutions, 2 state-owned and state-owned Holding enterprises, 3 collective enterprises, 4 shares or associates, 5 individual industrial and commercial households, 6 private enterprises, 7 HongKong, Macao and Taiwan wholly-owned enterprises, 8 wholly foreign-owned enterprises, 9 sino-foreign joint ventures, 10 association/private organizations, 11 other unites, 12 no unit)
VI. Have you established health records locally? (1 yes, 2 no, and haven’t heard of it, 3 no, but heard of it, 4 have no idea)

Data Processing. The amount of variables in the questionnaire is tremendous (409 in total). Therefore, we first need to extract 17 needed variables for research afterwards: C1(living city), q101(property of registry), Q104(average monthly total expenditure), Q105(average monthly total income), q201(whether you have done gainfully paid work for more than one hour in the week before May Day), q201a(working hours of this week, jump from q201), Q403(whether you have health records of local residents), q101b1(gender), age, q101e1(education level), q101h1(marital status), pnum(family size), q100(number of family members living together), q101l1(flowing range), q101m1y(year of current migration), q207(nature of current employment unit), q102(number of people in an worker’s family covered by the unit, about food and accommodation). Among them, data should first be screened by observing q101 according to the research subject of this paper. In addition, q101m1y should be transferred into “flow duration(2018-q101m1y)” according to the needs of this paper. Finally, since the raw data downloaded involved numerous missing values, its cleaning is necessary before analysis.

4. Empirical Analysis - OLS
4.1. Indicator Selection

Based on the questionnaire, Q104 was selected as the dependent variable, representing consumption level. Meanwhile, the core explanatory variable was the quality of employment. Other control and concurrent explanatory variables were personal characteristics, like age, gender, q101b1, marital status, pnum, q100, q101e1, q101l1, and q101m1y.

Firstly, we set variables Q403, q207, q101b1, q101h1, q101l1, q201 into dummy variables: healthins (when Q203 equals 1, healthins = 1, which means having health records; otherwise healthins = 0, which means no health records); stable (when q207 equals 1, 2, 3, stable = 1, which means the unit is within the system; otherwise stable = 0, which means outside the system); gender (when q101b1 equals 1, gender = 1, which means male; otherwise gender = 0, which means female); couple (when q101h1 equals 2, 3, 6, couple = 1, which means having regular partner; otherwise couple = 0, which means no regular partner); distance (when q101l1 equals 1, 4, distance = 1, which means out-of -province flow; otherwise distance = 0, which means in-province-flow); work (when q201quals 1, work = 1, which means employed; otherwise work = 0, which means unemployed)

The employment quality of farmer workers is from five aspects: wage level, work intensity, employment stability, job security and labor welfare. Among them, income can reflect the wage level,
the number of working hours can reflect the work intensity, the nature of current employment unit can reflect the employment stability, health records can reflect the work safety, and whether the food and accommodation are covered can reflect labor welfare. Accordingly, the calculation formula of employment quality index is as follows:

Due to the different data dimensions, we conducted Z-score standardization on variables Q105, q201a, q102, stable and healthins respectively. i represents individual farmer worker, and j represents the five sub-indicators of employment quality. Additionally, considering the negative correlation between working hours and employment quality, the inverse index of work intensity was obtained by subtracting the standardized difference of this index from 1 for analysis. Finally, we use the equal weight averaging method to obtain the desired index of employment quality:

\[
q_{normij} = \frac{(q_{ij} - \bar{q}_{ij})}{sd(q_{ij})} \\
nljob_{ij} = \frac{1}{5} \sum_{j=1}^{5} q_{normij} \times 100
\]

At last, this paper will further consider the impact of urban development differences. Thus, we add another two variables: City and interaction between city and employment quality. For the convenience of analysis, this paper divides the city into two parts: the main developed regions (represented by Beijing, Shanghai, Guangzhou and Hangzhou), and the rest less developed regions. Hence, the city dummy variable is set as D (when it is Beijing, Shanghai, Guangzhou and Hangzhou, D = 1, otherwise D = 0).

4.2. OLS Modeling Analysis

Building basic econometric model.

\[
\text{LnQ104i}=\beta_0+\beta_1\text{nljobi}+\beta_2\text{genderi}+\beta_3\text{agei}+\beta_4\text{q101e1i}+\beta_5\text{couplei}+\beta_6\text{pnumi}+\beta_7\text{q100i}+\beta_8\text{distancei}+\beta_9\text{q101m1yi}+\beta_{10}\text{Di}+\beta_{11}\text{D*nIjobi}+\epsilon
\]

Table 1. The meaning of some variables.

<table>
<thead>
<tr>
<th>LnQ104</th>
<th>average monthly total expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>nljob</td>
<td>employment quality</td>
</tr>
<tr>
<td>q101e1</td>
<td>education level</td>
</tr>
<tr>
<td>pnum</td>
<td>family size</td>
</tr>
<tr>
<td>q100</td>
<td>number of family members living together</td>
</tr>
<tr>
<td>q101m1y</td>
<td>flow duration(2018-q101m1y)</td>
</tr>
<tr>
<td>D</td>
<td>dummy variable of the city</td>
</tr>
</tbody>
</table>

From the correlation thermodynamic graph, we can find that except for variables pnum and q100, the correlation between other variables is acceptable. Thus the collinearity problem can be ignored. Since both pnum and q100 are not key research variables, either of them can be excluded. Here, we excluded variable q100 to improve the model.
Significance of coefficient.

**Figure 2.** Correlation Thermodynamic Graph.

**Table 2.** OLS analysis & optimized & modified.

<table>
<thead>
<tr>
<th></th>
<th>OLS basic (1)</th>
<th>OLS basic (2)</th>
<th>OLS basic (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>nIjob</strong></td>
<td>0.001***</td>
<td>0.001***</td>
<td>0.001***</td>
</tr>
<tr>
<td></td>
<td>(0.0001)</td>
<td>(0.0001)</td>
<td>(0.00001)</td>
</tr>
<tr>
<td><strong>gender</strong></td>
<td>0.007*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.004)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>age</strong></td>
<td>-0.007***</td>
<td>-0.006***</td>
<td>-0.006***</td>
</tr>
<tr>
<td></td>
<td>(0.0002)</td>
<td>(0.0002)</td>
<td>(0.0001)</td>
</tr>
<tr>
<td><strong>q101e1</strong></td>
<td>0.114***</td>
<td>0.115***</td>
<td>0.115***</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.002)</td>
<td>(0.001)</td>
</tr>
<tr>
<td><strong>couple</strong></td>
<td>0.320***</td>
<td>0.320***</td>
<td>0.317***</td>
</tr>
<tr>
<td></td>
<td>(0.007)</td>
<td>(0.007)</td>
<td>(0.002)</td>
</tr>
<tr>
<td><strong>pnum</strong></td>
<td>0.133***</td>
<td>0.133***</td>
<td>0.134***</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.002)</td>
<td>(0.001)</td>
</tr>
<tr>
<td><strong>distance</strong></td>
<td>-0.008**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.004)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>q101m1y</strong></td>
<td>0.006***</td>
<td>0.006***</td>
<td>0.006***</td>
</tr>
<tr>
<td></td>
<td>(0.0003)</td>
<td>(0.0003)</td>
<td>(0.0001)</td>
</tr>
<tr>
<td><strong>city</strong></td>
<td>0.131***</td>
<td>0.127***</td>
<td>0.128***</td>
</tr>
<tr>
<td></td>
<td>(0.007)</td>
<td>(0.007)</td>
<td>(0.002)</td>
</tr>
<tr>
<td><strong>city*nIjob</strong></td>
<td>0.002***</td>
<td>0.002***</td>
<td>0.001***</td>
</tr>
<tr>
<td></td>
<td>(0.0001)</td>
<td>(0.0001)</td>
<td>(0.00005)</td>
</tr>
<tr>
<td><strong>constant</strong></td>
<td>7.107***</td>
<td>7.103***</td>
<td>7.105***</td>
</tr>
<tr>
<td></td>
<td>(0.013)</td>
<td>(0.013)</td>
<td>(0.004)</td>
</tr>
<tr>
<td><strong>Adjusted R2</strong></td>
<td>0.224</td>
<td>0.224</td>
<td>0.826</td>
</tr>
</tbody>
</table>

*Note: *p<0.1; **p<0.05; ***p<0.01*
Firstly, as we can see the basic model (1) in the graph, only variable gender’s coefficient is insignificant. Therefore, we will use stepwise regression method, and test F and P values to select the best model form. Finally we found that when variables distance and gender are added respectively at last, although the coefficients of other variables were still obviously significant, these two variables themselves could no longer pass the p-value test at the significance level of 0.05. Thus, we chose to delete the them.

In conclusion, we obtained the final model and its results are shown in (2):

\[
\text{LnQ104i} = \beta_0 + \beta_1 n\text{jobi} + \beta_2 \text{agei} + \beta_3 q101e1i + \beta_4 q101h1i + \beta_5 \text{pnu-mi} + \beta_6 q101m1yi + \beta_7 \text{Di} + \beta_8 D*n\text{jobi} + e_i
\]

Examine the heteroscedasticity of the model. Although the modified model has passed the significance test, the fitting degree is not desirable, with only 0.224. Therefore, we test the heteroscedasticity of the model, which shows that there are joint increment between standardized residuals and explanatory variables. Thus, we use the weighted least-squares method for modification, with the inverse of the absolute value of standardized residuals being the weight.

After modification shown in (3), not only the coefficients of each variable is significant, the model-fitting degree also improved a lot, reaching 0.826. Thus, this model can be used for analysis.

5. Analysis and Suggestion

5.1. Analysis

Based on the date of migrant farmer workers in the questionnaire, the factors affecting workers’ consumption level are empirically tested by econometric models. The results show that:

I. There is a positive correlation between employment quality and consumption level. The consumption level of migrant farmer workers may possibly increase by 0.1% for every 1 unit increase in the indicator of employment quality. Therefore, employment quality does play an important role in promoting the consumption of migrant farmer workers.

II. In addition to the quality of employment, higher education level, companion, large family size, longer flowing time also has a positive effect on improving workers’ consumption level, and the effect of companionship is the most obvious factor among them. However, there is an inverse relationship between age and consumption level, which means the consumption level of migrant farmer workers will decrease by 0.6% with 1 unit increase in age.

III. The degree of urban development matters to the consumption level of migrant farmer workers. The higher degree of urban development, the higher the level of consumption of related farmer workers. Specifically, developed cities may increase the consumption level of migrant farmer workers by 12.8%. Meanwhile, the higher urban development level will promote the improvement of employment quality, Thus encouraging farmer workers to consume more. Specifically, developed cities can increase the possible promotion effect of employment quality on workers’ consumption level by 0.1%.

5.2. Suggestion

China possesses a vast majority of farmer workers, thus making it fundamental and conducive to fully stimulate the consumption potential of these workers. Therefore, based on the results of this study, we can obtain some enlightenment as follows: (a) The government should actively provide employment skills training for farmers. (b) Optimize Labor Contract Laws, and request enterprises to provide a safer working environment, finer labor welfare system, stricter supervision, so as to protect the rights of workers. (c) Provide policy welfare and related assistance to families, especially those with large members, so as to help improve their living conditions and enable them to con-
sume beyond subsistence. (d) Pay attention to the health problems of farmer workers. Regularly publicize relevant knowledge to help them learn how to establish and use health records.

6. Conclusions

In this paper, we discussed several factors that may potentially influence the consumption level of farmer workers, and came up with corresponding suggestions. This is crucial for the decision-making, which aims at further boosting the economy, of governments. Besides, it’s worth pointing that there are a majority of migrant farmer workers in China, so the problem considering lifting their consumption level can be a research heat spot.

Reference


