

The Empirical Study on Income Structure Changing to Farmers' Income Growth in Heilongjiang Province

Lou Sha^{1,a*}

¹Harbin University of Commerce, Harbin China 150028

^a lousha1983@163.com

Keywords: Grain production; Farmers' income; Income structure; Correlation analysis; Proportion of family operating income

Abstract. Heilongjiang, as a traditional agricultural province, the grain output accounts for one-tenth of the country and the grain production status is very important. Farmers' income structure in Heilongjiang has distinct characteristics, whether it has a certain impact on farmers' income growth or not, which is the core of this paper. Through the correlation analysis, we come to the conclusion that there is a significant relationship between the income growth and the structure of farmers in Heilongjiang. When the proportion of family operating income is increased, it is not conducive to the increase of farmers' income.

Introduction

From the past domestic development experience, diversified income is conducive to farmers' income growth [1]. Then, whether farmers' income growth in Heilongjiang is closely related to farmers' income structure or not, this paper introduces the correlation analysis on the specific impact of income proportion on farmers' income in Heilongjiang and explores the correlation between income structure and income increment [2-4].

Model Selections

In this paper, the simple correlation coefficient is Pearson's simple correlation coefficient. This part draws on Zhang Hongbing's analysis method (Zhang Hongbing et al., 2007). The concrete formula is as follows:

$$r = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2 (y_i - \bar{y})^2}} \quad (1)$$

Among them, n is the sample size, x_i and y_i are the two variable sample values, \bar{x} is the average of the variable x , \bar{y} is the average of the variable y .

Data Feature Analysis

Using SPSS software to describe the characteristics of the selected data, the following table:

Table 1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Farmers' income increment	21	-87.00	1380.00	387.2500	399.87365
Proportion of family operating income	21	63.03	91.70	76.7545	9.76532
Proportion of wage income	21	5.89	21.12	14.3440	4.93989
Proportion of property income	21	.38	7.18	4.0610	2.03229
Proportion of transfer income	21	1.02	11.90	4.8390	3.85431
Valid N (listwise)	21				

Correlation Results Analysis

The following results are obtained by simple correlation analysis with SPSS software:

Table 2 Correlations

		Proportion of family operating income	Proportion of wage income	Proportion of property income	Proportion of transfer payment
Increment of per capita farmers' income in Heilongjiang	Pearson Correlation	-0.725(**)	0.583(*)	0.668(**)	0.743(**)
	Sig. (2-tailed)	.000	.001	.006	.000
	N	21	21	21	21

From the analysis, we know that the correlation coefficient between the proportion of family operating income and farmers' income increment in Heilongjiang is -0.725. The proportion of wage income, property income and transfer payment has a positive impact on farmers' income in Heilongjiang and the correlation coefficients are 0.583, 0.668 and 0.743. All the above results are tested by t test and the correlation is very significant.

In comparison, the negative correlation between family operating income and farmers' income increment in Heilongjiang is very obvious. That is to say, the growth on the proportion of family operating income is not conducive to the income growth. On the contrary, the growth on the proportion of wage income, property income and transfer payment income is conducive to the expansion of farmers' income.

To sum up, the proportion of farmers' family operating income in Heilongjiang is relatively high and it has negative impact on income increment, which is not conducive to farmers' income growth in Heilongjiang. On the contrary, the proportion of wage income, property income and transfer payment has a positive relationship with farmers' income increment. However, the proportion is too small, which is still not conducive to farmers' income growth in Heilongjiang.

Conclusions

(1) The proportion of family operating income and income increment is negatively correlated. According to the correlation analysis, the proportion of farmers' family operating income in Heilongjiang is reduced by one percentage point and farmers' income increment will be increased by 0.725 percentage points. The result is tested by t test. According to the dual economic structure theory of the number of workers and peasants labor force conversion, we can conclude that the proportion of farmers' family operating income should show a reduction trend. Income growth is evident during the entire structure changing of farmers' income. This is consistent with the empirical analysis of the relationship between income structure changing and income growth in Heilongjiang [5].

(2) The proportion of wage income and income increment is positively correlated. According to the correlation analysis, the proportion of farmer's wage income in Heilongjiang is increased by 1 percentage point and farmer's income increment will be increased by 0.583 percentage points. The result is verified by t test. Similarly, according to the dual economic structure theory of the number of workers and peasants labor force conversion, we can conclude that the proportion of farmers' wage income should show a growth trend and with the rising wage income, which is conducive to farmers' income growth [6]. The hypothesis is validated in the empirical analysis of the income structure changing and farmers' income growth in Heilongjiang.

(3) The proportion of property income is positively related to the income growth. According to the correlation analysis, the proportion of farmers' property income in Heilongjiang is increased by

1 percentage point and farmer's income increment will be increased by 0.668 percentage points. The result is tested by t test. According to the experience of developed countries and the theory of dual economic structure, farmers' property income will become the third source of income equal to family operating income and wage income in the future [7]. Through empirical analysis, it is concluded that the proportion of farmers' property income in Heilongjiang is positively correlated with farmers' income growth.

(4) The proportion of transfer income is positively related to the income growth. According to the correlation analysis, the proportion of farmers' income transfer in Heilongjiang is increased by 1 percentage point and farmers' income increment will be increased by 0.743 percentage points. The result is verified by t test. According to the dual economic structure theory of the number of workers and peasants labor force conversion, such as triggering food crisis [8]. It can be concluded that with the transfer of labor force, the proportion of farmers' transfer income should have a growth trend.

On the whole, the income structure of farmers in Heilongjiang is closely related to the farmers' income growth. In other words, the diversified development is conducive to farmers' income growth in Heilongjiang [9]. On the contrary, it is not conducive to farmers' income growth. In order to fundamentally solve the problem of farmers' income structure in Heilongjiang, to reduce the proportion of family operating income appropriately, to promote the rapid growth of wage income, to secure the diversification of farmers' income will be a major theme in the future [10].

Acknowledgments

The paper is funded by the National Social Science Fund General Project "Research on Rural Financial Service Innovation and Risk Control in the Background of Agricultural Land Reform" (16BJL037).

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