

# Study on the influencing factors of consumption expenditure level of Rural Residents in China

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**Abstract:** With the further development of economic globalization, the economic strength of various countries has increased, the confidence of consumers has increased, and the consumption level of rural residents has improved. The index of Consumer Sentiment is a leading indicator to quantify consumers' subjective feelings about the current economic situation and consumer psychological state. The consumption expenditure level of Chinese rural residents is affected by many economic factors, but the influence of the index of Consumer Sentiment cannot be ignored. This paper mainly studies the relationship between per capita consumption expenditure level of Rural residents and per capita disposable income level, per capita GDP, rural consumer price index, gross output value index of agriculture, forestry, animal husbandry and fishery, and index of Consumer Sentiment.

**Keywords:** Household Consumption Level, Per Capita Disposable Income, Per Capita GDP, CPI, Index of Consumer Sentiment

## 1. Introduction

Economic globalization is the development trend of today's world economy. As the economic strength of various countries increases, the consumption level of consumers also further improves. In the past decades, China's economic strength has improved significantly. According to the National Bureau of Statistics, China's GDP in 2021 will reach 114.3 trillion yuan, with national public budget expenditure of 24.6 trillion yuan. According to statistical data quantitative analysis of China's rural residents per capita consumption expenditure level and per capita disposable income level, Per capita GROSS domestic product index, rural consumer price index, Gross output value index of agriculture, forestry, animal husbandry and fishery, Index of Consumer Sentiment relationship.

Through the research on the factors affecting the consumption level of residents, it can provide reference guidance for China to formulate policies to stimulate economic growth, and stimulate people's consumption in different regions, to greatly increase the GDP and improve the economic situation, which is conducive to the long-term stability and prosperity of the country.

## 2. Literature review

China is a large agricultural country, and the consumption level of rural residents plays an important role in China's economic development. Scholars analyze the factors affecting the consumption level of rural residents from multiple perspectives. Yang Lei (2020)<sup>[1]</sup> takes Hebei Province as an example to comprehensively analyze the factors that affect the consumption level of rural residents, including per capita disposable income, savings rate, price index, GDP and urbanization rate. Zheng Jiamei (2021)<sup>[2]</sup> analyzed the effects of income and social security expenditure and put forward suggestions on improving the consumption level of rural residents. Huang Lifan (2020)<sup>[3]</sup> made an in-depth analysis from the three-middle income hypothesis. Li Ming et al. (2011)<sup>[4]</sup> studied that consumer confidence index plays an indicator role in consumer demand.

**3. Research design**

**3.1 Data sources and description**

The original data selected in this paper are the per capita consumption expenditure of rural residents, per capita disposable income of rural residents, per capita GDP index (1978=100), rural consumer price index (1978=100), and gross output value index of agriculture, forestry, animal husbandry and fishery from 2000 to 2020 from China Statistical Yearbook published on the website of The National Bureau of Statistics and CSMAR Database.

**3.2 Descriptive analysis**

According to the knowledge of economics, the factors affecting the consumption level of rural residents are explained in Table 1:

*Table 1: Description of the meaning of variable symbols*

No.	symbol	instructions
1	$Y$	Per capita consumption expenditure of rural residents
2	$X_1$	Per capita disposable income
3	$X_2$	Per capita GROSS domestic product index
4	$X_3$	Rural consumer price index
5	$X_4$	Gross output value index of agriculture, forestry, animal husbandry and fishery
6	$X_5$	Index of Consumer Sentiment
7	$\hat{\beta}_i$	solve-for parameter
8	$\mu$	stochastic disturbance

**4. Empirical research**

**4.1 Model Establishment**

$$Y = \hat{\beta}_1 + \hat{\beta}_2 X_1 + \hat{\beta}_3 X_2 + \hat{\beta}_4 X_3 + \hat{\beta}_5 X_4 + \hat{\beta}_6 X_5 + \mu \quad (1)$$

Through Eviews9.0 econometric analysis software, regression analysis was carried out on the collected data, and the following results were obtained in Table 2:

$$Y = 2682.93 + 0.71X_1 + 2.08X_2 - 12.46X_3 - 0.21X_4 + 2.4X_5 \quad (2)$$

*Table 2: Results of multiple linear regression*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2682.926	1936.305	1.385591	0.1861
X1	0.705666	0.048107	14.66859	0.0000
X2	2.081651	1.314069	1.584126	0.1340
X3	12.46189	3.427955	3.635370	0.0024
X4	0.211453	2.052393	0.103027	0.9193
X5	2.403317	6.807824	0.353023	0.7290
R-squared	0.999505	F - statistic	6052.616	
Adjusted R-squared	0.999339	Prob (F - statistic)	0.000000	

**4.2 Model testing and modification**

**4.2.1 Model testing**

According to the results of multiple linear regression, the coefficient  $\hat{\beta}_2=0.71$  indicates that with the increase of per capita disposable income of rural residents, the per capita consumption expenditure level of rural residents increases.  $\hat{\beta}_3 =2.08$  indicates that with the increase of Per capita GROSS domestic product index, the per capita consumption expenditure level of rural residents increases. The coefficient  $\hat{\beta}_4 =-12.46$  indicates that with the increase of rural consumer price index, the per capita consumption expenditure of rural residents decreases.  $\hat{\beta}_6 =2.40$  indicates that with the improvement of

the Index of Consumer Sentiment, the consumption level of rural residents increases; The above variables are in line with the economic significance test.  $\hat{\beta}_5 = -0.21$  indicates that the Gross output value index of agriculture, forestry, animal husbandry and fishery is inversely proportional to the per capita consumption expenditure of rural residents, which does not conform to the economic significance, and variable  $X_5$  is removed.

Given the significance level  $\alpha=0.05$ , the remaining independent variables  $X_2$  and  $X_4$  do not meet the T-test after removing the independent variable  $X_5$ , so the model needs to be further modified.

#### 4.2.2 Model modification

Since the t-test value of variable  $X_4$  is the smallest, the variable  $X_4$  is firstly eliminated and the regression analysis of the model is conducted. The results are in Table 3:

$$Y = 2897.26 + 0.72X_1 + 1.92X_2 - 12.76X_3 \quad (3)$$

Table 3: Results of multiple linear regression of modified model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2897.264	787.2627	3.680174	0.0019
X1	0.721901	0.037312	19.34781	0.0000
X2	1.918007	0.491338	3.903637	0.0011
X3	12.75732	3.213821	3.969519	0.0010
R-squared	0.999491	F- statistic		11133.57
Adjusted R-squared	0.999402	Prob (F - statistic)		0.000000

The goodness of fit after adjustment is  $R^2 = 0.999$ , close to 1, indicating that the regression line has a high degree of fitting to the observed value, indicating that the model can effectively interpret the data.  $F = 11133.57$ , the regression model passed the F test and was significantly established.

## 5. Conclusions

Through regression analysis to establish the model, it can be found that the per capita consumption expenditure of rural residents has a linear correlation with the per capita disposable income of rural residents, per capita GDP, and rural residents' consumer price index.

In the process of modeling, the Index of Consumer Sentiment failed to pass the test of economic significance, and the Gross output value index of agriculture, forestry, animal husbandry and fishery failed to pass the T-test. The guess is due to the limitation of data selection. In the process of modeling, the linear correlation between the two variables and the per capita consumption expenditure of rural residents was not proved, but according to economic common sense, the Gross output value index of agriculture, forestry, animal husbandry and fishery and the Index of Consumer Sentiment are also factors affecting the level of rural residents' per capita consumption expenditure.

Modeling result means that to better promote the development of rural economy, can increase the disposable income of rural residents, stable prices, realize gross domestic product increased, stimulate the rural residents' consumption expenditure, thus promote the social economy into a virtuous circle, have construction significance for national stability and prosperity.

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