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# *Research on the Impact of Wage Income on Household Consumption Structure*

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***Abstract:*** The goal of social production is to continuously meet the consumption needs of the people. This study uses a combination of qualitative and quantitative analysis methods. With reference to Keynes 's classical consumption theory, a consumption function model is constructed for different types of consumption structures. The purpose of this study is to explore the impact of wage income of family members on household consumption structure, so as to further protect and improve people 's livelihood and stimulate economic vitality. After empirical testing, this paper concludes that the wage income of family members has a significant impact on the household consumption structure. From the perspective of new wage income, this finding helps us to study how wage income growth changes the consumption structure, reveals the specific performance of income distribution effect in the field of consumption, and further enriches and expands the consumption theory. Therefore, families should scientifically plan the layout of consumption and savings according to the actual situation of their wage income.

***Keywords:*** Wage Income, Consumption Structure, Necessary consumption, Development Consumption, Enjoyment Consumption.

## 1. Introduction

In recent years, the Chinese government has continued to emphasize the promotion of household consumption to stimulate economic vitality [1]. In modern society, the family as the basic unit of society, its consumption structure not only reflects the quality of life of family members, but also closely linked with the country 's economic progress. As a key economic source for the survival and development of each family member, wage income has gradually become an important factor affecting the household consumption structure in the rapid economic growth and the diversification of employment patterns. Especially in 2013, the key node of China 's economic transformation and upgrading, the relationship between family members ' wage income and family consumption structure has attracted more and more attention. According to statistics, the income of Chinese residents grew steadily in 2013. Annual per capita income reached 8896 yuan, an increase of 12.4 %. According to the survey results of urban-rural integrated households implemented since the fourth quarter of 2012, the per capita disposable income of the national residents was 18,311 yuan, an increase of 10.9 % year-on-year. At the same time, the consumer price of the whole year increased by 2.6 % compared

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with the previous year, of which the consumer price of food increased by 4.7 %, and the price of agricultural products increased by 3.2 %.

In order to further protect and improve people 's livelihood, the government proposed to improve the income distribution system and standardize the income distribution order [2]. In this context, it is particularly important to conduct in-depth research on the impact of family members ' wage income on household consumption structure. This study not only helps us to understand the evolution of Chinese household consumption patterns, provide reference for policy formulation, promote consumption upgrading, but also provides an important reference for studying household consumption behavior and optimizing consumption structure.

In contrast, most of the existing literature focuses on the impact of population aging [3], education level and Internet use on household consumption structure. This article explores the family consumption structure from a new perspective - the wage income of family members.

This study uses CHFS data, combined with quantitative and qualitative analysis. First of all, through the questionnaire survey to collect data, a detailed understanding of the wage income of different family members and the characteristics of family consumption structure. Then, using Keynes 's classical consumption theory [4], this paper analyzes the impact of wage income on household consumption, and constructs a consumption function model for the differences in different types of consumption, and processes and analyzes the data to reveal the relationship between wage income of family members and household consumption structure. Finally, this paper will explain and discuss the research results in combination with relevant theories and actual conditions, hoping to explore the specific impact of family members ' wage income on family consumption structure.

## 2. Literature review

In 1857, the German statistician Ernst Engel put forward the famous " Engel 's law " [5]. At the beginning of the 20th century, the economist Marshall introduced the influence of the change of consumption structure in the economy into the whole economic theory system [6]. In the 1930 s, the Keynesian school studied the composition of consumption structure from the perspective of total consumption and consumption function theory from the perspective of macro economy, and further elaborated the relationship between consumption structure and industrial structure [7]. After the 1950 s, the theory of Western consumer economics shifted from the study of macro-social aggregate to the study of micro-individuals, taking the family as an individual unit to study, and the content was mostly to analyze the household consumption structure.

A large number of literatures have confirmed that household income and household assets are variables that significantly affect household consumption. Household income is the decisive factor supporting their current consumer spending behavior [8]. Household income and household assets can measure the human wealth and household wealth that play a key role in consumption [9]. Household asset allocation structure is also a key variable affecting consumer behavior [10]. At the same time, the inclusion of assets in the control can also avoid the interference of the wealth effect caused by the rise in asset prices on consumption changes [11].

In summary, although there are many studies on household income and household assets on household consumption, the literature on the choice of household consumption structure from the perspective of wage income of family members is still very rare. From this point of view, this paper uses the data of China 's household financial survey to conduct in-depth research on this.

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# 3. Research design

## 3.1. Data source

This paper uses the 2013 China Household Finance Survey (CHFS) of Southwest University of Finance and Economics, and research center 's ' questionnaire ' data. The sample size is 28143 volumes covering demographic characteristics, household assets and liabilities, household insurance and security, household expenditure and income as the data basis for analysis.

## 3.2. Model specification and variable definition

### 3.2.1. Model setting

Referring to Keynes 's classical consumption theory, the positive proportional relationship between consumption level and income level, that is, with the increase of income, consumption will also increase, but the speed of consumption increase will gradually slow down. Combined with the use of wage income to affect the household consumption structure, and for different types of consumption structure, the consumption function model is constructed:

$$CON_i = \lambda_0 + \lambda_1 MP_i + \gamma C_i + \omega_i \quad (1)$$

$CON_i$ represents the total household consumption expenditure, including survival consumption, development consumption and enjoyment consumption, $MP_i$ represents wage income, and $\lambda_1$ is its coefficient. $C_i$ represents the set of control variables. $\lambda_0$ represents the constant term, and $\omega_i$ represents the random disturbance term.

### 3.2.2. Definition of variables

The types, names and descriptions of variables are shown in Table 1.

Table 1: Variables specific explanation table

| Variable category | variable name | variable interpretation |
|---|---|---|
| Dependent Variable | | |
| | LC | After the total sum of all household expenditures is added, the logarithm is taken. |
| | NC | The proportion of consumption necessary to compensate workers for necessary labor consumption |
| | DC | The proportion of consumer demand generated by people in order to seek better development |
| | EC | The proportion of consumer demand generated by people in order to seek better development |
| Independent Variable | L(wage) | The proportion of consumption that focuses on material life enjoyment as the main purpose |
| Moderator Variable | Job Stability | Frequency of job change |
| Control Variable | Gender | Age of respondents |
| | Household Size | The total population of the interviewed families |

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Table 1: (continued).

| | | |
|---|---|---|
| | Marriage | Respondents married or not |
| | Registered Residence | Rural household registration = 1, urban household registration = 0 |
| | Endowment insurance | Whether the respondents participated in the social endowment insurance |
| | Family Housing Assets | Respondents ' families own their own houses |
| | Per Capita Household Income | The per capita annual income of the Respondents ' family |
| | The Highest Academic Qualification | The highest degree completed by the head of household |
| | Numbers of families living in the house | The number of families living in this house |
| | Main economic activities | Main economic activities |
| | Whether living in the city | Whether living in the city |
| | foreign nationality | foreign nationality |
| | The number of houses in the community and outside the residence | The number of houses in the community and outside the residence |
| | The number of houses other than village | The number of houses other than village |
| | Overall happiness | Overall happiness |
| | individual ID without household | individual ID without household |
| | Year | Year |
| | Rural | Rural |
| | relationship to household head | relationship to household head |
| | relationship to respondent | relationship to respondent |
| | rural registered resident | rural registered resident |
| | Region | Region |
| | Amount of other income | Amount of other income |

### 3.3. Descriptive statistics

Table 2 shows the descriptive statistical results of the main variables. The maximum value of wage income is 13.82, and the minimum value of wage income is 0, ranging from 0 to 13.82, indicating that the wage level has a wide distribution in the sample. The average wage income is 9.459, and the standard deviation is 2.088. The wage level is relatively concentrated,but there are some differences. On the whole, the descriptive statistical analysis of each variable is more consistent with the existing relevant research and the actual development situation, indicating that the data used is reasonable and reliable.

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Table 2: Descriptive statistics

| Variable | Mean | SD | Min | Max |
|---|---|---|---|---|
| LC | 8.076 | 2.641 | 0 | 17.22 |
| LNC | 3.517 | 3.557 | 0 | 8.787 |
| L DC | 7.126 | 0.516 | 6.078 | 8.028 |
| LEC | 7.371 | 2.199 | 0 | 9.657 |
| L(wage) | 9.459 | 2.088 | 0 | 13.82 |
| Numbers of families living in the house | 1.032 | 0.312 | 1 | 10 |
| Main economic activities | 1 | 0 | 1 | 1 |
| Whether living in the city | 1 | 0.00800 | 1 | 2 |
| foreign nationality | 2.993 | 0.0840 | 2 | 3 |
| The number of houses in the community and outside the residence | 0.150 | 0.524 | 0 | 15 |
| The number of houses other than village | 0.153 | 0.431 | 0 | 9 |
| Household Size | 4.165 | 1.696 | 1 | 18 |
| Overall happiness | 2.315 | 0.889 | 1 | 9 |
| individual ID without household | 2.582 | 1.524 | 1 | 18 |
| year | 2011 | 0 | 2011 | 2011 |
| rural | 0.429 | 0.495 | 0 | 1 |
| relationship to household head | 1.653 | 1.486 | 1 | 11 |
| relationship to respondent | 3.615 | 2.551 | 1 | 11 |
| rural registered resident | 1.427 | 0.495 | 1 | 2 |
| region | 1.792 | 0.796 | 1 | 3 |

## 4. Empirical results

### 4.1. Baseline regression

Table 3 reports the test results of the benchmark regression. The positive impact of wage income on LNC, LDC, LEC and LC has been significantly reflected in the four types of consumption. The coefficients of L (wage) are positive and show statistical significance in most models. This finding shows that as the wage level increases, the household 's consumption capacity will increase accordingly. Household size has a significant role in promoting consumption. In any model, the coefficient of Household Size is positive, and this effect is statistically significant. This means that the larger the family size, the higher the overall consumption level. From the fitting degree of the model, the R-squared value of the model m2 is the highest, which is 0.154, which means that the model is more effective in explaining developmental consumption.

Table 3: The regression results of different consumption types of families

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | m1 | m2 | m3 | m4 |
| VARIABLES | LNC | LDC | LEC | LC |
| Ln wage | 0.071*** | 0.027*** | 0.054*** | 0.069*** |
| | (0.027) | (0.004) | (0.012) | (0.015) |
| Household Size | 0.625*** | 0.053*** | 0.167*** | 0.197*** |
| | (0.046) | (0.007) | (0.020) | (0.026) |

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Table 3: (continued).

| | | | | |
|---|---|---|---|---|
| Marriage | -0.001 | -0.040*** | -0.005 | -0.147*** |
| | (0.086) | (0.012) | (0.037) | (0.048) |
| Registered Residence | -0.603*** | -0.225*** | -0.282*** | -0.184** |
| | (0.143) | (0.020) | (0.063) | (0.080) |
| Endowment insurance | 0.072 | 0.039*** | 0.156*** | 0.057 |
| | (0.087) | (0.012) | (0.038) | (0.048) |
| Family Housing Assets | -0.214 | -0.110*** | -0.242*** | -0.464*** |
| | (0.182) | (0.025) | (0.078) | (0.102) |
| Per Capita Household Income | 0.000 | 0.000** | 0.000 | 0.000** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| The Highest Academic Qualification | 0.301*** | 0.081*** | 0.218*** | 0.260*** |
| | (0.033) | (0.005) | (0.015) | (0.018) |
| Constant | 0.831* | 6.757*** | 6.459*** | 7.041*** |
| | (0.453) | (0.065) | (0.198) | (0.252) |
| Observations | 4,089 | 3,989 | 4,028 | 4,671 |
| R-squared | 0.065 | 0.154 | 0.093 | 0.074 |

## 4.2. Heterogeneity test

In order to test the influence of wage income of male and female family members on household consumption and consumption structure, the benchmark regression model is used to regress the sample data of male and female respectively. The results show that wage income has a more significant effect on women 's survival consumption, development consumption and enjoyment consumption than men, as shown in table 4.

Table 4: Gender heterogeneity test

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | m1 | m2 | m3 | m4 |
| VARIABLES | LNC | LDC | LEC | LC |
| Ln wage | 0.023 | 0.009** | 0.023** | 0.029** |
| | (0.017) | (0.004) | (0.010) | (0.012) |
| X1 | 0.063*** | 0.006** | 0.023*** | 0.015* |
| | (0.012) | (0.003) | (0.007) | (0.008) |
| Household Size | 0.416*** | 0.087*** | 0.174*** | 0.175*** |
| | (0.014) | (0.003) | (0.008) | (0.009) |
| Marriage | -0.462*** | -0.084*** | -0.266*** | -0.270*** |
| | (0.020) | (0.004) | (0.011) | (0.013) |
| rural | -1.019*** | -0.794*** | -0.907*** | -0.689*** |
| | (0.048) | (0.011) | (0.028) | (0.032) |
| Endowment insurance | -0.026 | 0.014 | 0.093*** | 0.098*** |
| | (0.045) | (0.010) | (0.026) | (0.031) |

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Table 4: (continued).

| | | | | |
|---|---|---|---|---|
| Family Housing Assets | -0.115 | -0.111*** | -0.380*** | -0.528*** |
| | (0.087) | (0.019) | (0.051) | (0.059) |
| Amount of another income | 0.000*** | 0.000*** | 0.000*** | 0.000*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| The Highest Academic Qualification | 0.152*** | 0.067*** | 0.195*** | 0.190*** |
| | (0.012) | (0.003) | (0.007) | (0.008) |
| Constant | 3.382*** | 7.091*** | 7.659*** | 8.026*** |
| | (0.130) | (0.029) | (0.076) | (0.088) |
| Observations | 29,324 | 29,324 | 29,324 | 29,324 |
| R-squared | 0.075 | 0.228 | 0.108 | 0.067 |

## 5. Conclusion

Wage income has a significant positive impact on the consumption structure of households. Wage income not only determines the family 's disposable income level, but also relates to the family 's consumption ability and consumption preference. With the increase of wage income, families tend to increase their expenditure on non-essential items such as education, health, entertainment and tourism after meeting their basic living needs, thus promoting the consumption structure to a higher level and more diversified direction. Wage income can significantly promote the adjustment of household consumption structure and the increase of household consumption rate. The test verifies that the wage income of family members affects the household consumption structure through the frequency of work changes, and L (wage) can mainly affect the household consumption structure through the three paths of LNC, LDC and LEC, and all of them are positive.

Keynes ' absolute income theory holds that income determines consumption. To promote consumption growth, people must first develop the economy and increase residents ' income. Therefore, the government should first create more jobs, promote employment and reduce unemployment. Second, the government should optimize the income distribution system, maintain the simultaneous growth of residents ' income and economy, and narrow the income gap. Third, cultivate new consumption hotspots, expand domestic demand, and increase household consumption. Although the research on the relationship between wage income and household consumption structure has made some progress, there are still some deficiencies. Although the current research covers nationwide data, it is difficult to accurately reveal the unique differences between different income groups. The research method is relatively simple, which leads to the lack of comprehensiveness of the analysis results. Therefore, people need to use modern information technology such as big data to strengthen data collection and analysis and adopt more comprehensive and diversified research methods to reveal the internal logic of this relationship more accurately.

## References

[1] *Zhigao, D., Qichong, C. and Chenhui, G. (2022). On Measurement and Driving Factors of China's High-quality Economic Development Based on Data of 30 Provinces from 2014 to 2018. West Forum on Economy and Management, 33, 66-76.*

DOI: 10.54254/2754-1169/123/2024MUR0105

[2] *Feng, J., Li, Z., Wang, X. and Zhang, Y. (2021). The Influencing Factors of Chinese Household Consumption and the Sources of Urban and Rural Consumption Differences–Based on the Registration Form the Dataset of CHIP. In 2021 International Conference on Financial Management and Economic Transition (FMET 2021), 452-461. Atlantis Press.*

[3] *Zhao, R. (2024). The Heterogeneous Impact of Internet Skills on Elderly Consumption in the Rural China: Based on the China Health and Retirement Longitudinal Study (CHARLS). Journal of Yunnan Agricultural University (Social Science), 18, 164-172.*

[4] *Xiaoguo, J. and Qin, J. (2022). Research on the Bottleneck and Reform Path of China's Manufacturing Supply-side Development. Journal of Anhui University of Technology (Social Sciences), 39, 15-18.*

[5] *Herdegen, M. (2024). Principles of International Economic Law, 3rd Edition. Oxford University Press.*

[6] *Rogerson, R. (2024). Why Labor Supply Matters for Macroeconomics. Journal of Economic Perspectives, 38, 137-158.*

[7] *Cai, C. and Sun, C. (2024). The Differences in Cultural Consumption between Rural Mobile and Non-Mobile Families. Journal of Yunnan Agricultural University (Social Science), 18, 166-173.*

[8] *Zhouzhou, S. (2024). The Asset Effect of Household on Education Expenditure: Analysis Based on China Household Survey Data. Journal of Shanghai Polytechnic University, 41.*

[9] *Ruya, Z. (2023). A Study on the Influence Mechanism of Education Level on Household Risk Financial Asset Allocation.*

[10] *Qing-zheng, Z. and Shi-xin, L. (2022). The Influence of Household Income on Farmers' Entrepreneurial Decision-Making. Hubei Agricultural Sciences, 61, 209.*

[11] *Fang, J., Luo, J., Zhou, J. and Jiang, H.. A Study on the Influence of House Price on the Consumption Inequality of Urban Residents.*