

A Study on the Factors Influencing the Consumption Upgrade of Urban and Rural Residents in Chinese Provinces

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Abstract: This paper aims to explore the evolution characteristics of the consumption structure and the factors influencing the consumption upgrade among urban and rural residents in Chinese provinces. Based on interprovincial data of urban and rural residents' consumption, the paper analyzes the demand elasticity of eight major types of consumption and examines the impact of urbanization rate and elderly dependency ratio on consumption upgrade. The study finds that the urbanization rate is a key factor in promoting the growth of consumption expenditure. This paper provides empirical evidence for understanding the changes in the consumption structure of urban and rural residents in China and offers references for formulating relevant policies.

Keywords: Consumption Upgrade, Consumption Structure, Influencing Factors.

1. Introduction

With the sustained economic development of China and the continuous increase in residents' income levels, the consumption structure of urban and rural residents is undergoing profound changes. The evolution of the consumption structure is not only an important manifestation of the improvement in residents' living standards but also a significant driving force for economic restructuring and industrial upgrading. In recent years, the consumption patterns of urban and rural residents in China have gradually shifted from survival-oriented consumption to enjoyment-oriented and development-oriented consumption. During this process, differences in the consumption structure between different regions and urban and rural areas have gradually emerged, reflecting the imbalance in regional economic development.

This study focuses on the characteristics and influencing factors of the consumption structure evolution among urban and rural residents in Chinese provinces. By analyzing the consumption data of urban and rural residents across provinces, this paper delves into the comparison of demand elasticities and the descriptive statistical features of major variable in the statistical yearbooks of various regions. Specifically, this paper pays attention to the impact of factors such as the urbanization rate and the elderly dependency ratio on consumption upgrade. The urbanization rate, as an important indicator of regional economic development, has a significant promoting effect on the growth of residents' consumption expenditure and the upgrading of the consumption structure. Meanwhile, the increase in the elderly dependency ratio has also had a profound impact on the consumption structure, particularly in the growth of consumption in the fields of medical care and elderly services.

The research presented in this paper aims to provide empirical evidence for understanding the changes in the consumption structure of urban and rural residents in China and to offer scientifically sound and reasonable policy recommendations to policymakers. Through an in-depth analysis of provincial data, this paper reveals the underlying

patterns and driving forces behind the evolution of the consumption structure of urban and rural residents in China, providing theoretical support and practical guidance for promoting coordinated regional development and improving residents' quality of life.

2. Theoretical Framework and Literature Review

The consumption structure refers to the proportional relationships of various types of consumer goods in the consumption process of residents, covering aspects such as food, clothing, housing, transportation and communication, medical care, and education and entertainment. Narrowly defined, it refers to the proportional relationships of different types of consumer goods; broadly defined, it includes the consumption proportions of various social groups, the consumption proportions of social public distribution and individual distribution, and the consumption proportions that meet different needs for survival, enjoyment, and development.

In recent years, the consumption structure of urban and rural residents in China has undergone significant changes. Zhang and Zhang (2024) pointed out that with economic development and increased resident income, consumption has shifted from survival-oriented to enjoyment-oriented and development-oriented. The proportion of basic living consumption such as food and clothing has decreased, while the proportion of service-oriented consumption such as housing, medical care, and education and entertainment has increased, reflecting the optimization and upgrading of the consumption structure. Li (2024) argued that the rationalization of the consumption structure means a more coordinated proportion of various consumer goods, which can better meet the diverse needs of residents. The government has accelerated the rationalization of the consumption structure through policy guidance and market regulation, improving the quality and efficiency of consumption.

The shift in consumption levels is an important manifestation of the evolution of residents' consumption structure. Deng and Liang (2021) pointed out that the

transition of consumption from survival-oriented to enjoyment-oriented and development-oriented reflects the improvement of residents' living standards and consumption concepts. An increasing number of residents are beginning to focus on the quality and experience of consumption, pursuing higher-level spiritual enjoyment and self-development. Wang et al. (2020) also pointed out that there are significant differences in the consumption structure between provinces and between urban and rural areas in China. The eastern regions and first-tier cities have higher levels of economic development, resident income, and consumption, resulting in a more optimized consumption structure. In contrast, the central and western regions and rural areas are relatively underdeveloped, with consumption structures still focused on basic living consumption. This gap reflects the imbalance in regional economic development and suggests the need to promote integrated urban-rural development and reduce differences in consumption structure.

With the improvement of residents' living standards, their consumption concepts have also changed significantly, becoming an internal driving force for the evolution of the consumption structure. Xu (2019) found that urban residents in the Beijing-Tianjin-Hebei region not only focus on the functionality and price of goods when consuming but also pay attention to their cultural connotations and brand value. The development of digital finance has also profoundly changed residents' consumption habits. Ma (2021) found that digital finance has an important impact on the consumption upgrade of residents in Xi'an. Based on this, Xu et al. (2020) argued that promoting the optimization and upgrading of the consumption structure requires increasing residents' income levels, improving consumption policies, guiding rational

consumption, strengthening market regulation, protecting consumer rights, and promoting industrial upgrading and technological innovation to meet residents' diverse consumption needs.

3. Data Sources and Research Design

3.1. Data Sources

The data utilized in this study are sourced from the National Bureau of Statistics and the China Economic Network Database, encompassing data on urban and rural residents' consumption across China's 31 provinces, autonomous regions, and municipalities directly under the central government from 2011 to 2023. Key indicators include consumption expenditure, elderly dependency ratio, urbanization rate, income, and consumption of high-end goods and services.

3.2. Descriptive Statistical Analysis

In the "Total," "Urban," and "Rural" areas, the average values and standard deviations of the elderly dependency ratio and urbanization rate of the permanent population are consistent. Specifically, the average elderly dependency ratio is 16.46 with a standard deviation of 4.57, while the average urbanization rate is 61.09 with a standard deviation of 12.02. Overall, consumption expenditure and income levels in urban areas are generally higher than those in the total and rural areas, with rural areas having relatively lower consumption expenditure and income. This indicates significant differences in income and consumption levels between urban and rural areas, although these disparities are gradually narrowing.

Table 1. Descriptive Statistics of Main variable

	variable	N	Mean	SD	Min	Max
Total	consume	279	19,603.88	7,570.62	7,316.95	48,879.30
	l_cons1	279	5,058.36	3,158.77	1,553.01	18,302.54
	l_cons2	279	0.24	0.04	0.18	0.42
	oadr	279	16.45	4.57	7.01	28.77
	ur	279	61.08	12.02	26.23	89.33
	income	279	28,242.18	12,542.85	10,730.00	79,610.00
Urban	consume	279	24,782.19	6,924.45	14,636.88	51,294.60
	l_cons1	279	6,420.91	3,203.38	3,236.83	19,836.44
	l_cons2	279	0.24	0.04	0.18	0.43
	oadr	279	16.45	4.57	7.01	28.77
	ur	279	61.08	12.02	26.23	89.33
	income	279	37,617.10	11,827.38	21,803.86	84,034.00
Rural	consume	279	12,520.12	4,236.50	4,822.07	27,483.37
	l_cons1	279	2,907.42	1,268.86	836.40	8,325.54
	l_cons2	279	0.22	0.03	0.15	0.34
	oadr	279	16.45	4.57	7.01	28.77
	ur	279	61.08	12.02	26.23	89.33
	income	279	15,548.28	6,154.41	6,276.59	39,729.42

3.3. Model Construction

Based on the interprovincial data of urban and rural residents' consumption, this study analyzes the evolution of the consumption structure. The key variables involved in the study include consumption expenditure, elderly dependency ratio of the permanent population, urbanization rate of the permanent population, and the urban-rural income ratio.

The formula for calculating income elasticity of demand is as follows:

$$EM_i = \frac{\partial X_i / X_i}{\partial Y / Y} = \xi_i \frac{Y}{X_i P_i} = \xi_i \frac{Y}{C_i} \quad (1)$$

Where, EM_i represents the income elasticity of demand, X_i is the original quantity demanded, P_i is the price.

Benchmark Regression Formula:

$$consume_{it} = \alpha + \beta_1 oadr_{it} + \beta_2 ur_{it} + \varepsilon_{it} \quad (2)$$

Consumption Upgrade Channel Test Formula:

$$Y_{it} = \alpha + \beta_1 oadr_{it} + \beta_2 ur_{it} + \beta_3 l_cons1_{it} + \beta_4 l_cons2_{it} + \varepsilon_{it} \quad (3)$$

Consumption Upgrade Mechanism Test Formula:

$$income_{it} = \alpha + \beta_1 oadr_{it} + \beta_2 ur_{it} + \varepsilon_{it} \quad (4)$$

$$l_cons1_{it} = Constant + \beta_1 oadr_{it} + \beta_2 ur_{it} + \varepsilon_{it} \quad (5)$$

$$l_cons2_{it} = Constant + \beta_1 oadr_{it} + \beta_2 ur_{it} + \varepsilon_{it} \quad (6)$$

Where, oadr: Elderly Dependency Ratio of the permanent population, ur: Urbanization Rate of the permanent population, income: Per capita disposable income, l_cons1: High-end goods and services consumption, l_cons2: Proportion of high-end goods and services consumption.

4. Empirical Results and Analysis

4.1. Comparison of Demand Elasticities

Table 2 shows that the income elasticity of demand for the eight categories of consumption expenditure is positive across "Total", "Urban", and "Rural" areas. In "Total" and "Urban" areas, the ranking of demand elasticity is housing, other goods and services, and medical care, with average elasticities of 0.82 and 0.80, respectively. In "Rural" areas, the ranking is housing and transportation and communication, with an average elasticity of 0.79. The highest demand elasticity for housing indicates that it is a high-end product; other goods and services have the second-highest elasticity in "Total" and "Urban" areas, indicating that they are high-end goods. In "Total" and "Urban" areas, the demand elasticity for medical care is below the average, indicating that it is a necessity; in "Rural" areas, the demand elasticity for food and tobacco is above the average, indicating that it is a luxury.

Table 2. Comparison of Demand Elasticities

variable	Total	Urban	Rural
EM_ce_foodtobaccoaliquor	0.65	0.63	0.83
EM_ce_clothing	0.45	0.24	0.66
EM_ce_resident	1.50	1.66	1.06
EM_ce_dailyuse	0.71	0.67	0.84
EM_ce_trafficconmmunicate	0.73	0.71	0.93
EM_ce_educateculture	0.72	0.70	0.41
EM_ce_healthcare	0.77	0.81	0.74
EM_ce_otherservices	1.05	0.98	0.86

4.2. Analysis of Factors Influencing Consumption Upgrade

According to Table 3, both the elderly dependency ratio and urbanization rate have a significant positive impact on total consumption expenditure in the overall population, urban, and rural areas. These results indicate that the urbanization process not only increases residents' income levels but also promotes the upgrading of the consumption structure.

Table 3. Elderly Dependency Ratio and Urbanization Rate of the Permanent Population and Consumption Upgrade

	(1)	(2)	(3)
variable	Total	Urban	Rural
oadr	472.50***	151.37**	243.60***
	(5.20)	(2.41)	(6.77)
ur	571.84***	475.59***	214.91***
	(9.92)	(17.99)	(14.17)
Constant	-28,759.92***	-13,375.12***	-1,450.07
	(-3.96)	(-3.63)	(-0.69)
Observations	279	279	279
R-squared	0.40	0.63	0.68

Note: ***, **, * indicate significance at the 0.01, 0.05, and 0.1 levels, respectively; values in parentheses are the t-statistics for the parameters. This notation is consistent throughout.

4.3. Testing the Channels of Consumption Upgrade

Table 4. Testing the Channels of Consumption Upgrade in Urban Areas

	(1)	(2)	(3)	(4)
variable	l_cons1	l_cons2	l_cons1	l_cons2
oadr	192.11***	0.00***		
	(4.75)	(3.13)		
ur			201.94***	0.00***
			(19.33)	(14.64)
Constant	3,258.93***	0.22***	-5,915.52***	0.10***
	(4.71)	(22.64)	(-9.10)	(9.85)
Observations	279	279	279	279
R-squared	0.08	0.03	0.57	0.44

According to Table 4, in models (1) and (2), the elderly dependency ratio of the permanent population has a significant positive impact on the consumption expenditure and proportion of high-end products and services. This indicates that as the degree of aging increases, the demand for high-end products and services is on the rise, and the elderly population's demand for these items is growing. Additionally, the increase in the proportion of the elderly population may drive consumption upgrades in an aging society, promoting the consumption of high-end products and services.

In models (3) and (4), the urbanization rate also has a significant positive impact on the consumption expenditure and proportion of high-end products and services. This suggests that as urbanization progresses, the consumption level and structure of urban residents change, with higher income levels and a greater inclination towards high-end products and services. The demand for high-end products and services increases accordingly. The results also show that an increase in the urban-rural income gap has a negative impact on the consumption of high-end products and services. Rural residents with lower incomes have weaker demand for these items, while urban residents, who are already the main consumers, do not see a significant increase in demand with higher incomes.

Table 5. Testing the Channels of Consumption Upgrade in Rural Areas

	(1)	(2)	(3)	(4)
variable	l_cons1	l_cons2	l_cons1	l_cons2
oadr	111.11*** (7.27)	0.00 (0.22)		
ur			78.88*** (18.72)	0.00*** (7.78)
Constant	1,078.64*** (4.13)	0.23*** (32.50)	- 1,911.07*** (-7.28)	0.16*** (18.40)
Observations	279	279	279	279
R-squared	0.16	0.00	0.56	0.18

According to Table 5, in model (1), the elderly dependency ratio of the permanent population has a significant positive impact on the consumption expenditure of high-end products and services. This indicates that as the degree of aging deepens, the demand for high-end products and services is on the rise. However, unlike in urban areas, the impact of the elderly dependency ratio on the proportion of high-end products and services in rural areas is not significant. This suggests that the consumption growth of the elderly population in rural areas is mainly reflected in quantity rather than changes in the proportion of consumption structure. In models (3) and (4), the urbanization rate has a significant positive impact on both the consumption expenditure and the proportion of high-end products and services. This indicates that as urbanization progresses, rural residents' consumption of high-end products and services increases. Urbanization drives up residents' income levels and quality of life, thereby increasing the demand for high-end products. The significant impact of the urbanization rate on the proportion of high-end products and services also shows that urbanization not only promotes an increase in consumption levels but also drives changes in the consumption structure of rural residents, with high-end products accounting for a larger share of total consumption expenditure.

Table 6. Testing the Mechanisms of Consumption Upgrade in Urban Areas

	(1)	(2)	(3)
variable	income	l_cons1	l_cons2
oadr	501.76*** (4.33)	14.95 (0.49)	-0.00 (-1.39)
ur	715.95*** (14.66)	221.33*** (17.13)	0.00*** (12.39)
Constant	-24,284.74*** (-3.57)	-10,450.59*** (-5.81)	0.10*** (3.42)
Observations	279	279	279
R-squared	0.57	0.59	0.44

According to Table 6, in model (1), the elderly dependency ratio has a significant positive impact on income levels. However, in models (2) and (3), the impact of the elderly dependency ratio on the consumption expenditure and proportion of high-end products and services is not significant. Unlike previous studies that emphasized the inhibitory effect of aging on income levels, this study finds that in certain contexts, an increase in the elderly dependency ratio does not

significantly reduce income, although the underlying mechanisms require further exploration. The lack of significant impact on high-end consumption expenditure or its proportion in total expenditure suggests that the consumption needs of the elderly in urban areas are relatively fixed and involve less spending on high-end products and services.

The urbanization rate shows a significant positive impact on income, high-end product and service expenditure, and their proportion in all models, with highly significant coefficients. In model (1), the urbanization rate has a significant positive impact on income levels, indicating a strong correlation between increased urbanization and rising income levels. This suggests that the urbanization process significantly boosts residents' income. In model (2), the urbanization rate also has a significant positive impact on the consumption expenditure of high-end products and services. This indicates that increased urbanization not only raises income levels but also drives the consumption of high-end products and services, reflecting the role of urbanization in promoting the upgrading of the consumption structure. In model (3), the urbanization rate has a significant positive impact on the proportion of high-end products and services in total consumption expenditure. This suggests that as urbanization progresses, the proportion of high-end products and services in total consumption expenditure increases, with people's consumption preferences gradually shifting towards high-end goods and services.

Table 7. Testing the Mechanisms of Consumption Upgrade in Rural Areas

	(1)	(2)	(3)
variable	income	l_cons1	l_cons2
oadr	232.51*** (4.48)	34.15*** (2.78)	-0.00*** (-2.82)
ur	303.80*** (13.88)	70.32*** (13.59)	0.00*** (7.26)
Constant	2,127.82 (0.70)	-1,424.60** (-1.98)	0.17*** (7.04)
Observations	279	279	279
R-squared	0.68	0.58	0.21

According to Table 7, in model (1), the elderly dependency ratio in rural areas has a significant positive impact on disposable income. In model (2), the elderly dependency ratio also has a significant positive impact on the consumption expenditure of high-end products and services, indicating that the increase in the elderly population drives up the demand for high-end products and services, particularly in the areas of health and elderly care. In model (3), the impact of the elderly dependency ratio on the proportion of high-end products and services is significantly negative. This suggests that while the increase in the rural elderly population promotes the consumption of high-end products, its growth rate is lower than that of overall consumption expenditure.

The urbanization rate in rural areas has a significant positive impact on disposable income, high-end product and service expenditure, and their proportion in all models. In model (1), the positive impact of the urbanization rate on disposable income indicates that the urbanization process in rural areas also increases the income level of rural residents, although not as rapidly as in urban areas. This suggests that

with the development of urbanization, rural residents have more employment opportunities and higher income levels, which in turn drives up overall disposable income. In model (2), the rural urbanization rate also has a significant positive impact on the consumption expenditure of high-end products and services, indicating that urbanization drives up the demand for high-end products and services among residents. In model (3), the positive impact of the rural urbanization rate on the proportion of high-end products and services suggests that urbanization not only increases high-end consumption expenditure but also raises the proportion of high-end products and services in overall consumption expenditure. This indicates that as the level of urbanization increases, the proportion of high-end product demand among rural residents gradually rises.

5. Conclusions and Recommendations

The consumption structure of urban and rural residents in China is shifting from survival-oriented to enjoyment-oriented and development-oriented, with a decline in the proportion of basic living consumption such as food and clothing, and an increase in service-oriented consumption such as housing, medical care, and education and entertainment. This reflects the optimization and upgrading of the consumption structure. Consumption structures in the eastern regions and first-tier cities are more optimized, while those in central and western regions and rural areas need improvement, highlighting the imbalance in regional economic development. The study finds that the increase in the urbanization rate significantly promotes consumption expenditure growth and consumption structure upgrading by creating more employment opportunities, changing consumption concepts, and improving infrastructure. Meanwhile, the rise in the elderly dependency ratio drives up family expenditures on medical care and elderly services and increases the demand for specific products and services such as health food, fitness equipment, and leisure travel, further expanding the consumer market.

Based on the above findings, to promote consumption upgrade, policymakers should value the role of urbanization. They should optimize urban planning, enhance infrastructure and public services, and promote industrial upgrading to create more employment opportunities and increase residents' income levels. Attention should also be paid to the coordinated development of urbanization and ecological environment. In addition, the government should raise

residents' income through tax relief, increasing the minimum wage standard, and strengthening labor market regulation. Encouraging innovation and entrepreneurship and strengthening social security for low-income groups to alleviate their living pressure can enhance residents' consumption capacity and promote the upgrading of the consumption structure.

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