ISSN 2616-5902 Vol. 5, Issue 6: 167-176, DOI: 10.25236/AJBM.2023.050625

Research on the Influence of Circulation Innovation on the Upgrading of Consumption Structure

Shihao Sun

School of International Economics and Business, Anhui University of Finance and Economics, Bengbu, China

Abstract: *Based on the China Family Panel Studies (CFPS) database, the paper examines the impact of circulation innovation on household consumption upgrading by building a two-way fixed panel model. The study found that circulation innovation can significantly promote the upgrading of residents' consumption structure, that is, provide upgrading of consumption objects, cater to the upgrading of consumption patterns, and meet the change of consumption concepts from three aspects of product innovation, channel innovation, and service innovation, fully identify consumers' purchase preferences, and stimulate consumers' internal needs.*

Keywords: *Circulation innovation; Consumption upgrading; CFPS*

1. Introduction

Maslow put forward in the demand hierarchy theory that consumers' demand for goods is subject to their preferences and needs at their stage, and the primary motivation of their consumption behavior is to solve the basic survival problems. With the improvement of income level and the change of consumption concept, consumers will increase their demand for enjoyment and service. In line with the demand level theory, consumption upgrading is manifested in three levels: upgrading of product technology content, facilitation of circulation channels, and increase of service consumption. From the three aspects of products, channels and services, the circulation industry provides the products needed for the upgrading of consumption objects, caters to the channels needed for the transformation of consumption patterns, and meets the services needed for the innovation of consumption concepts, and achieves the goal of consumption upgrading both internally and externally[1].

2. Theoretical Analysis

2.1. Product Innovation Mechanism

The objective needs of people determine the direction of consumption upgrading. With the improvement of income level and cultural level, consumers pay more attention to product quality and brand. And under the influence of the wave of knowledge and information, the content of consumption has also expanded from tangible products to intangible service products, especially the demand for education, culture and other aspects has risen sharply[2].Product innovation is the key to improve product quality and optimize brand image, so as to meet the high-level needs of consumers after the budget constraints are relaxed. Under the background of digital economy, circulation companies exert influence on product innovation by virtue of information technology, which is embodied in the following aspects: first, the virtual space agglomeration of heterogeneous demand. Second, the identification and brand development of consumer communities. Third, supply chain demand response. At the same time, within the enterprise, the high-quality processing of information helps to break through the existing cognitive constraints of the management, optimize the management decisions at all levels, improve the coordination of the supply chain, and thus facilitate the development and production of new products.

Hypothesis 1: The circulation industry responds to the high-level demand brought by consumer upgrading through product innovation.

ISSN 2616-5902 Vol. 5, Issue 6: 167-176, DOI: 10.25236/AJBM.2023.050625

2.2. Channel Innovation Mechanism

The era of mobile internet has overturned the traditional trading mode and expanded the traditional purchasing channels. The vigorous development of information technology has provided consumers with a variety of shopping channels with different functions and attributes, not only meeting the fragmented and mobile shopping needs of consumers, but also changing their shopping habits. More and more consumers tend to use different consumption channels at different stages of the purchase process[3].The inherent boundary between online and offline has been gradually broken, and distributors with a large number of physical stores have jointly met the high-level needs of consumers through multiple channels. Online retail has played an important role in meeting the diversification of service consumption. Distributors use big data technology to analyze customers' purchase behavior, provide targeted preferential information for consumers through precision marketing, broaden the consumption selection set, and promote consumption upgrading.

Hypothesis 2: The circulation industry adapts to the consumption upgrading brought by the change of consumption mode through channel innovation.

2.3. Service Innovation Mechanism

The new round of vigorous development of information technology has prompted circulation merchants to extend commodity consumption to service consumption, thus driving the overall consumption growth. Customers not only pay attention to the cost and quality of products, but also have higher requirements for service and time. Timely consumption and personalized service have become extremely important factors affecting customer experience[4].In addition to meeting the daily consumption needs of residents, the circulation industry also undertakes some derivative functions such as culture, education, old-age care and medical care. It is expected that in the future, the circulation industry will expand its services to community canteens, health centers, culture and sports and other new business forms with strong public welfare color, with more public welfare and welfare attributes of positive externalities.

Hypothesis 3: The circulation industry meets the consumption upgrading brought by the change of consumption concept through service innovation.

3. Research Design

3.1. Data Sources

The data used in this paper are from the China Family Panel Studies(CFPS) database, China Trade And External Economic Statistical Yearbook and the China Statistics Yearbook. The China Family Panel Studies (CFPS) database is a national household micro-survey data funded by the "985" project of Peking University and implemented and published by the China Social Science Survey Center of Peking University. It involves three levels of community, family and individual, and can represent 95% of the population sample of the whole country. This paper selects the data in 2016 and 2018 in the CFPS database, and finally selects 11508 observations through matching household questionnaire data and personal questionnaire data, and constructs a two-period balanced panel data. Among them, the explained variable data and the family-level control variable data in this paper are from the family questionnaire in the China Family Tracking Survey (CFPS) database, and the individual-level control variable data are from the individual questionnaire in the China Family Panel Studies (CFPS) database. Since CFPS2016 and CFPS2018 do not set household heads,So this paper refers to the practice of Liu Wen (2018), takes the financial respondent in the family members as the head of household, extracts the characteristic variables of the head of household from the personal table and matches them with the family table [5].

This paper uses the data of China Trade and External Economic Statistical Yearbook to measure the total factor productivity of the circulation industry at the provincial level. The measurement of total factor productivity of circulation industry involves output index data and input index data. Considering the leading role of the circulation industry, this paper will use the data of the wholesale and retail industries to measure the total factor productivity of the circulation industry. The control variable data at the provincial level are selected from China Statistical Yearbook.

ISSN 2616-5902 Vol. 5, Issue 6: 167-176, DOI: 10.25236/AJBM.2023.050625

3.2. Model Settings

First, construct an econometric model to examine the relationship between the improvement of circulation efficiency and the upgrading of household consumption, and test hypothesis 1 and hypothesis 2. Intuitively, the explained variable "household consumption upgrading" can be measured using microhousehold survey data and extended linear expenditure (ELES) model. The core explanatory variable "total factor productivity of circulation industry" is obtained by data envelopment analysis (DEA) using provincial level data. While analyzing the overall sample performance, this paper will also distinguish and examine it from three aspects: family characteristics, household head characteristics and regional characteristics. The model is constructed as follows:

$$C_{ijt} = \alpha_0 + \alpha_1 TFP_{ijt} + \alpha_2 X_{ijt} + \sigma_i + \lambda_t + \tau_{ijt} \tag{1}$$

In model (1), C_{ijt} represents the consumption upgrading level of province j family i in the th year. TFP_{ijt} represents the total factor productivity of the circulation industry in the area i. X_{ijt} is a set of control variables including family level (family income, family net assets, family population size), head of household level (age, sex, education, marital status, health level) and regional level (economic development level, traditional financial level), σ_i represents family fixed effect, λ_t represents time fixed effect, and τ_{ijt} represents random disturbance. In addition, since the research issue of this paper is the relationship between the development of the circulation industry at the provincial level and the upgrading of household consumption, we fixed the robust standard to the provincial level by mistake to avoid the estimation bias caused by the correlation problem of households in the same province. Finally, this paper uses the interpolation method to supplement the missing variable data.

3.3. Variable description

3.3.1. Interpreted variable

With reference to the practice of Liu Xiangdong and Mi Zhuang (2020)[6], this paper uses the ELES model to divide consumption expenditure into basic consumption and non-basic consumption. The Extend Linear Expenditure System (ELES) model is based on Linear Expenditure System (LES) model, which adds the conditions for consumption-savings decision-making. By analyzing the marginal consumption tendency of various consumption expenditures, it analyzes the consumption development trend of residents. The model assumes that the income elasticity of basic consumption demand is low and that of non-basic consumption demand is high, which is basically consistent with the reality. At the same time, considering the structural characteristics of data and the convenience of calculation, this paper sets the following linear consumption function:

$$p_i q_i = p_i r_i + \beta_i (I - \sum_{j=1}^{n} p_j r_j) \tag{2}$$

In model (2), p_i is the price of the i consumer goods; q_i is the demand for the i consumer goods; $p_i r_i$ is the basic demand of the i consumer goods; I is the marginal consumption tendency of the i consumer goods; $\beta_i (I - \sum_{j=1}^{n} p_j r_j)$ represents the excess demand for the ith consumer goods after meeting the basic demand. model (2) Can be morphed to $p_i q_i = (p_i r_i + \beta_i \sum_{j=1}^{n} p_j r_j) + \beta_i I$. Suppose $b_i = p_i r_i + \beta_i \sum_{j=1}^{n} p_j r_j$,then we can build the following econometric model: $V_i = b_i + \beta_i I + u_i$, u_i is the random error term.By estimating the coefficient of b_i and β_i ,The basic consumption demand of eight categories of goods and services is calculated by formula (3). Then, we can get the non-basic consumption part of the ith consumer goods, and use the increase of non-basic consumption proportion as a measure of residents' consumption upgrading.

ISSN 2616-5902 Vol. 5, Issue 6: 167-176, DOI: 10.25236/AJBM.2023.050625

$$p_i r_i = b_i - \beta_i \sum_{i=1}^{n} b_i / (1 - \sum_{i=1}^{n} \beta_i) \tag{3}$$

$$d_i = V_i - p_i r_i \tag{4}$$

3.3.2. Core Explanatory Variables

In this paper, the research sample of circulation industry is limited to commodity circulation in a narrow sense, which covers wholesale and retail industries.

The circulation efficiency is calculated by referring to the two-stage independent nonlinear DEA model of Wang Xiaodong and Wang Shiyi (2016)[7]. The circulation efficiency can be expressed as:

$$\theta_p = \frac{C^T Z_p}{a^T X_p + b^T Y_p} \tag{5}$$

Among them, X is the input in the wholesale sector, Y is the additional input in the retail sector, and Z is the final output of the circulation industry.

3.4. Descriptive Statistics of Variables

The descriptive statistical results of the main variables in this paper are shown in Table 1.It can be seen from Table 1 that the consumption upgrading level of Chinese households is generally low, and there are significant differences. The average value of the proportion of non-basic consumption of households is 0.476, the maximum value is 0.934, and the minimum value is 0.153. The average value of the efficiency of the circulation industry at the regional level is 1.049, the maximum value is 2.417, and the minimum value is 0.612, indicating that the circulation efficiency is on the rise as a whole, but the development gap between provinces is relatively large. Among the household characteristic variables, the maximum and minimum values of total household income are 15.936 and 0 respectively, and the maximum and minimum values of household net assets are 19.199 and 4.605 respectively, indicating that the gap between the rich and the poor is large. The average value of family population size is 3.499, the maximum value is 14, and the minimum value is 1, indicating that Chinese families are mainly composed of three or four families, but the population size of individual families varies greatly. Among the personal characteristics variables of the head of household, the age, sex, education level, marital status and health level of the head of household are 52 years old, male, 7.545 years old, married and healthy respectively, indicating that the average head of household interviewed is a male married person aged 52, with junior high school education and good physical condition. At the same time, there are also significant differences between the economic development level and the traditional financial development level of provinces and cities. The maximum value of GDP is 2.558,the minimum value is 0.498.

Table 1: Descriptive statistics of variables.

Variable	Observations	Mean value	S.D.	Min	Max
C	11439	0.476	3.022	0.153	0.934
Tfp	11508	1.049	0.185	0.612	2.417
ln_income	11409	9.323	1.115	0	15.936
ln_property	11071	12.369	1.453	4.605	19.199
Pop	11508	3.499	1.785	1	14
Age	11508	52.394	13.623	17	95
Gender	11608	0.541	0.498	0	1
Edu	11508	7.545	4.500	0	22
Marry	11508	0.842	0.365	0	1
Health	11465	0.635	0.481	0	1
Gdp	11508	1	0.447	0.498	2.558
Finance	11507	3.076	0.906	0	4.043

ISSN 2616-5902 Vol. 5, Issue 6: 167-176, DOI: 10.25236/AJBM.2023.050625

4. Empirical Analysis

4.1. Baseline Regression

Table 2 shows the baseline regression results of the improvement of circulation efficiency on the upgrading of residents' consumption. First, this paper estimates model(1) using a two-way fixed effect model, and fixes the robust standard to the provincial level. The results of column (1) do not include the control variables at the family level, individual level and provincial level. The results of the remaining three columns include the control variables at the family level, individual level and provincial level respectively. From the regression results in Table 2, it can be seen that the improvement of circulation efficiency has a significant positive impact on the upgrading of household consumption, that is, the improvement of circulation efficiency has improved the effective transaction rate of goods in the region and the matching rate of supply and demand information, so that consumers can enjoy better products and services through more efficient circulation channels, and then increase consumers' willingness to buy and stimulate potential consumption demand. The estimation results are still robust after adding control variables in turn. Secondly, similar to the existing literature, some of the control variables also show some significance, which is consistent with the logic of the fact: the family characteristic variable has a strong explanatory power on the upgrading of residents' consumption.

Table 2: Baseline regression results.

variable	(1)	(2)	(3)	(4)
Tfp	0.690***	0.765***	0.797***	0.549***
	(0.061)	(0.069)	(0.067)	(0.068)
ln_income		0.199***	0.160***	0.190***
		(0.053)	(0.049)	(0.050)
ln_property		-0.058***	-0.085***	-0.15***
		(0.027)	(0.033)	(0.032)
Pop		0.127***	0.100***	0.067***
		(0.029)	(0.022)	(0.021)
Age			0.0003	0.0004
			(0.001)	(0.001)
Gender			-0.078	-0.106
			(0.070)	(0.070)
Edu			0.030***	0.029***
			(0.008)	(0.008)
Marry			0.410***	0.406***
			(0.155)	(0.155)
Health			0.059	0.071
			(0.081)	(0.081)
Development				-0.652***
				(0.049)
Finance				-0.279***
				(0.570)
Cons	-0.248***	-1.912***	-1.733***	-0.980*
	(0.072)	(0.539)	(0.563)	(0.571)
Province fixed effect	yes	yes	yes	yes
time fixed effect	yes	yes	yes	yes
N	11439	10916	10876	10875
R^2	0.011	0.018	0.024	0.050

Note: * * *, * * and * indicate that they have passed the significance level test of 10%, 5% and 1% respectively, The same part in the following table will not be repeated.

Secondly, similar to the existing literature, some of the control variables also show some significance, which is consistent with the logic of the fact: the family characteristic variable has a strong explanatory power on the upgrading of residents' consumption. The total household income has a significant promoting effect on the upgrading of residents' consumption, which is consistent with the persistent income hypothesis. The impact of household net assets on household consumption upgrading is significantly negative, indicating that the increase of household assets at this stage will be used for the basic consumption expenditure of households through the cross-period smoothing of consumption.

ISSN 2616-5902 Vol. 5, Issue 6: 167-176, DOI: 10.25236/AJBM.2023.050625

Similar to the research results of Chen Binkai and Yang Rudai (2013)[8], the larger the household population, the higher the level of consumption upgrading of the household. In addition, the variable coefficient of the head of household characteristics basically does not pass the significance test, which may be because the head of household characteristic variable is less affected by time in the short term and is absorbed by the fixed effect of the family to a certain extent. The exceptions are the educational level and marital status of the head of household. We found that the higher the education level of the head of household, the higher the consumption level. The reason is that the higher the cultural level of consumers, the higher the demand for the quality of goods and services. In addition, the household headed by a married person is in an upgraded state of consumption, which may be because the household headed by a married person has a relatively stable income and expenditure situation and faces a low risk of uncertainty. Finally, we find that the level of economic and financial development in the region is significantly negatively correlated with the upgrading of household consumption, indicating that, on the whole, the development of regional economy and finance is conducive to promoting the growth of household basic consumption expenditure.

4.2. Mechanism Analysis

The previous study found that the improvement of circulation efficiency has significantly promoted the upgrading of residents' consumption. This part will further examine the internal mechanism of the development of circulation industry affecting the upgrading of residents' consumption. According to the analysis of the previous theoretical mechanism, we will analyze whether the efficiency of the circulation industry can affect the upgrading of residents' consumption through the product innovation mechanism, channel innovation mechanism and service innovation mechanism. This part verifies or excludes theoretical hypothesis 1, theoretical hypothesis 2 and theoretical hypothesis 3 in order to clarify the internal logic of circulation efficiency affecting residents' consumption upgrading.

4.2.1. Product Innovation Mechanism

The regression results in Table 3 show that when the education level of the head of household is primary school or below, the regression coefficients of circulation innovation to consumption upgrading are 0.279 respectively, and all have passed the significance test of 5%. When the education level of the head of household is junior high school or above, the impact of circulation innovation on consumption upgrading is 0.925, which is significant at the level of 1%. It shows that the circulation industry is more responsive to the high-level demand of the upgraded consumer through product innovation. Theoretical hypothesis 1 was verified.

Table 3: Product Innovation Mechanism regression results.

variable	Primary school and below	Junior high school and above
Tfp	0.279**	0.925***
	(0.121)	(0.163)
family	yes	yes
people	yes	yes
region	yes	yes
Province fixed effect	yes	yes
time fixed effect	yes	yes
N	5048	4876
R^2	0.077	0.120

4.2.2. Channel Innovation Mechanism

We take online shopping frequency as the agent variable of channel innovation, and guess that the impact of the improvement of circulation efficiency on household consumption upgrading will be different among groups with different online shopping frequencies. We set the virtual variable of online shopping frequency as follows: divide the families that make online shopping at least once a week into families with high online shopping frequency, and set the indicator to 1; otherwise, divide them into families with low online shopping frequency, and set the indicator to 0. After grouping regression, the results are shown in Table 4. For families with high frequency of online shopping, the improvement of circulation efficiency can significantly promote consumption upgrading. However, the consumption level of households with low frequency of online shopping is not affected by the circulation efficiency. It reflects that the impact of circulation efficiency on residents' consumption upgrading is closely related to channel innovation to some extent, and has become a long-term trend, that is, theoretical hypothesis 2 is established.

ISSN 2616-5902 Vol. 5, Issue 6: 167-176, DOI: 10.25236/AJBM.2023.050625

Table 4: Channel innovation mechanism regression results.

variable	Low frequency	Highfrequency
Tfp	0.165 (0.108)	0.242*** (0.086)
family	yes	yes
people	yes	yes
region	yes	yes
Province fixed effect	yes	yes
time fixed effect	yes	yes
N	8268	2533
R^2	0.027	0.078

4.2.3. Service Innovation Mechanism

It is particularly necessary to examine whether the development of the circulation industry affects the heterogeneity of liquidity constraints on the upgrading of residents' consumption. We refer to the practice of Zhang Xun et al. (2020)[9] and take the household debt ratio as a measure of liquidity constraints. Table 5 is a regression based on whether the household debt ratio is higher than the average. The results show that the improvement of circulation efficiency has a more obvious impact on the consumption upgrading of highly indebted households. In other words, the circulation industry optimizes the family's intertemporal consumption decisions through service innovation, and theoretical hypothesis 3 is established.

Table 5: Service innovation mechanism regression results.

variable	below average	above average
Tfp	0.568** (0.087)	1.207*** (0.311)
family	yes	yes
people	yes	yes
region	yes	yes
Province fixed effect	yes	yes
time fixed effect	yes	yes
N	5823	5052
R^2	0.103	0.047

4.3. Robustness Test

4.3.1. Sample Error Correction Processing

This paper takes the micro-family survey data as the research sample. Household consumption and household income are based on the evaluation of the respondents, and are often underestimated or overestimated, so the sample data may have the first and last singular values. The consumption behavior of families at the poles of wealth and poverty is different from that of most families [10].In order to enhance the robustness of the conclusion, this paper adopts the winsorize command to shrink the household consumption expenditure data, household income data and household asset data by 1%, and then regress. Table 6 shows the results after correcting the measurement error: the efficiency improvement of circulation industry still significantly promoted the upgrading of residents' consumption.

Table 6: Sample error correction processing regression results.

variable	(1)	(2)
Tfp	0.285*** (0.042)	0.314*** (0.047)
family	no	yes
people	no	yes
region	no	yes
Province fixed effect	yes	yes
time fixed effect	yes	yes
N	11439	10875
R^2	0.038	0.123

ISSN 2616-5902 Vol. 5, Issue 6: 167-176, DOI: 10.25236/AJBM.2023.050625

4.3.2. Replace Metrics

Change the measurement method of consumption upgrading. At present, domestic scholars generally study the issue of household consumption upgrading from the perspective of consumption structure, taking the growth of development and enjoyment consumption as the measurement index of consumption upgrading, which is similar to the research content of this paper. However, taking the proportion of development and enjoyment consumption as a measure to explain the upgrading of household consumption is not comprehensive, so it is not an ideal indicator of the variables to be explained in this paper. However, we can still use it as a replacement indicator to support the conclusion of this paper.Column (2) shows the regression results of replacement consumption upgrading indicators: the impact of circulation efficiency on residents' consumption upgrading is still significant.

Measurement method of replacement circulation efficiency. In this paper, DEA-malmquist model is used to re-measure the circulation efficiency. With reference to the research of Wang Xiaodong et al. (2020)[11] ,new input-output variables are selected. Specifically, the number of employees and capital stock are regarded as inputs to the circulation industry, and the main business income is regarded as output. At present, scholars at home and abroad generally use the perpetual inventory method to estimate the capital stock. [12]The basic calculation formula is as follows:. Where, K represents the actual capital stock, I represents the amount of fixed assets investment, and is the capital depreciation rate. This paper refers to the practice of Zhang Jun et al. (2007)[13] .The capital depreciation rate is 9.6%. The capital stock in the base period is expressed as the amount of fixed assets investment in the base period divided by 10%. The price index p of fixed assets investment is used for reduction . Table 7 (3) shows the regression results of the replacement circulation efficiency index: it still supports the conclusion of the benchmark regression.

Table 7: Replace metrics regression results.

variable	(1)	(2)	(3)	(4)
Tfp	0.018*	0.024**	0.671**	0.727**
	(0.010)	(0.010)	(0.325)	(0.294)
family	no	yes	no	yes
people	no	yes	no	yes
region	no	yes	no	yes
Province fixed effect	yes	yes	yes	yes
time fixed effect	yes	yes	yes	yes
N	11477	10908	11333	10774
R^2	0.004	0.055	0.033	0.049

4.4. Heterogeneity Analysis

4.4.1. Regional Heterogeneity

Is there any regional difference in the impact of the development of circulation industry on the upgrading of residents' consumption? To this end, the sample is divided into the eastern region, the central region and the western region and returned respectively. Table 8 shows the test results of regional heterogeneity: the regression coefficients of circulation efficiency improvement on household consumption upgrading in eastern, central and western regions are 2.958, 0.613 and 0.518, respectively, which have passed the significance test of 1%, 5% and 1% respectively. It shows that there is regional heterogeneity in the impact of the improvement of circulation efficiency on the upgrading of residents' consumption. The promotion of circulation efficiency has the greatest impact on the upgrading of household consumption in the eastern region, which may be due to the high level of commercial development and residents' purchasing power in the eastern region, which is more conducive to the innovation of commercial formats and meet the high-level consumption needs of residents. For the western region, due to its remote geographical location, imperfect infrastructure and slow development of the circulation industry, the improvement of circulation efficiency can effectively reduce the cost of circulation services in the western region and alleviate the diseconomies of scale of the circulation industry in the economically underdeveloped regions. In contrast, the efficiency improvement of the circulation industry has a lower significance on household consumption in the central region than in the eastern and western regions. This is because the circulation infrastructure in the central region is relatively complete, but the economic and commercial development is relatively slow, so the positive impact of the improvement of the efficiency of the circulation industry on the consumption upgrading

ISSN 2616-5902 Vol. 5, Issue 6: 167-176, DOI: 10.25236/AJBM.2023.050625

of the central families is lower than that of the eastern and western families.

Table 8: Regional Heterogeneity regression results.

variable	Eastern region	Central region	Western region
Tfp	2.958*** (0.363)	0.613** (0.297)	0.518*** (0.060)
family	yes	yes	yes
people	yes	yes	yes
region	yes	yes	yes
Province fixed effect	yes	yes	yes
time fixed effect	yes	yes	yes
N	4729	3339	2668
R^2	0.093	0.244	0.279

4.4.2. Urban-rural Heterogeneity

Considering the dual economic structure of China, we divided the total sample into urban and rural families for heterogeneity analysis. The regression results are shown in Table 9. The results show that the improvement of circulation efficiency has significantly promoted the consumption upgrading of urban and rural residents, indicating that the improvement of circulation environment has alleviated the mismatch between supply and demand, and met the diversified and personalized excess demand of urban and rural households. In contrast, the improvement of circulation efficiency has a more obvious impact on urban families. On the one hand, there has been a long-term situation of urban-rural segmentation in China, resulting in the lagging level of circulation infrastructure. On the other hand, the digital divide that may exist in rural areas has affected the popularity of emerging business forms making it impossible for residents who fail to effectively access and fully utilize information to participate in and share the results of circulation innovation.

Table 9: Urban-rural Heterogeneity regression results.

variable	Rural	Urban
Tfp	0.215** (0.105)	0.653*** (0.116)
family	yes	yes
people	yes	yes
region	yes	yes
Provincefixed effect	yes	yes
time fixed effect	yes	yes
N	5500	5375
R^2	0.037	0.067

5. Research Conclusion

With reference to the practice of Liu Xiangdong and Mi Zhuang (2020)[6], this paper uses the ELES model to divide consumption expenditure into basic consumption and non-basic consumption, and uses the CFPS2016 and CFPS2018 Chinese household tracking survey data to match with the macro level of the China Trade And External Economic Statistical Yearbook datas to test the impact effect and internal mechanism of circulation innovation on consumption upgrading. And take the urban and rural household registration, location and household income level as the dividing point to estimate, so as to reveal the heterogeneity impact of circulation innovation on consumption upgrading. According to the results of theoretical analysis and empirical test, the main conclusions of this paper are as follows:

(1) The improvement of circulation efficiency has a significant positive impact on the upgrading of household consumption, that is, the improvement of circulation efficiency will lead to the reduction of transaction costs, so that consumers can enjoy better products and services through more efficient circulation channels, and then increase consumers' willingness to buy.

(2) Circulation innovation promotes the upgrading of residents' consumption through product innovation, service innovation and channel innovation. Specifically, the circulation industry responds to the high-level demand brought by consumer upgrading through product innovation; Adapt to the consumption upgrading brought by the change of consumption mode through channel innovation; Meet

ISSN 2616-5902 Vol. 5, Issue 6: 167-176, DOI: 10.25236/AJBM.2023.050625

the consumption upgrading brought by the change of consumption concept through service innovation.

(3) In contrast, the impact of circulation innovation on urban families is more obvious; The promotion of circulation efficiency to the upgrading of household consumption in the eastern region is higher than that in the central and western regions; The impact of circulation innovation on the consumption upgrading of low-income residents is higher than that of families of middle and high income groups.

References

[1] Du Danqing. A Research on the Dynamic Mechanism of Internet boosts consumption upgrade [J]. Economist, 2017(03):48-54.
[2] Du Danqing, Zhan Zhikang. The Basic Role of Consumption under the New Economic Background——Based on the Perspective of Circulation Function Development and Platform Reengineering [J]. Economist, 2018(02):62-69.
[3] Chang Mingzhe, Li Aihua. The Research on the Impact of Multichannel Integration on Cross-channel Retention Behavior[J]. China Business and Market, 2020(06):41-50.
[4] Wang Zhengpei, LI Guoxin. Research on the Evolution Logic of the New Retail From the Perspective of Consumption Experience[J]. Chinese Journal of Management, 2019(03):333-342.
[5] Liu Wen. Income Gap, Social Capital and Rural Consumption [J]. Chinese Rural Economy, 2018(06):84-100.
[6] Liu Xiangdong, Mi Zhuang. Is Chinese Consumer Consumption in an Upgraded State?—Research based on the CGSS2010 & CGSS2017Data[J]. Economist, 2020(01):86-97.
[7] Wang Xiaodong, Wang Shixun. Evaluation of China's Distribution Efficiency and its Influencing Factors—Based on Improved Two-stage DEA Model Without Linear Flow Assumption[J]. Finance & Trade Economics, 2016(05):119-130+159.
[8] Chen Binkai, Yang Rudai. Land Supply, Housing Price and Household Saving in Urban China: Evidence from Urban Household Survey[J]. Economic Research Journal, 2013(01):110-122.
[9] Zhang Xun, Yang Tong, Wang Chen, Wan Guanghua. Digital Finance and Household Consumption: Theory and Evidence from China[J]. Management World, 2020(11):48-63.
[10] Carroll C D. Why Do the Rich Save So Much?[R]. National Bureau of Economic Research, 1998.
[11] Wang Xiaodong, Chen Liang, Wu Zixin. The Influence of Circulation Efficiency on Manufacturing Performance—The Guiding Characteristics of Circulation Industry in the Supply-side Structural Reform [J]. Economic Theory and Business Management, 2020(04):82-99.
[12] Chow G C. Capital Formation and Economic Growth in China[J]. Quarterly Journal of Economics, 1993(3):809-842.
[13] Zhang Jun, Gao Yuan, Fu Yong, Zhang Hong. Why Does China Enjoy So Much Better Physical Infrastructure?[J]. Economic Research Journal, 2007(03):4-19.