

Exploring the Nexus Between Market Transparency, Information Sharing, and Service Consumption in China: A Theoretical Inquiry

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Abstract. Advancing the high-quality development of service consumption is a fundamental strategy for the Chinese government to expand domestic demand, promote employment, and stabilize economic growth. This paper, after systematically reviewing the impact of market transparency, information sharing, and the level of service consumption in the Chinese market, proposes two theoretical hypotheses. These hypotheses are then empirically tested using panel data from 30 provinces in China from 2012 to 2022. The study finds that market transparency not only directly enhances the level of service consumption but also indirectly promotes it through the facilitation of information sharing. Consequently, the Chinese government should foster a more transparent market transaction environment, strengthen the construction of information infrastructure, encourage high-level openness in the service sector, and support the development of new scenarios and new business forms in service consumption, to further unleash the potential of service consumption.

Keywords: Market Transparency, Service Consumption Level, Information Sharing.

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1 Problem Statement and Literature Review

1.1 Problem Statement

With the pursuit of high-quality economic growth and the increase in per capita disposable income among residents, service consumption has gradually become a new direction for the upgrading of China's consumer structure. Data released by the National Bureau of Statistics of China shows that in 2023, the per capita expenditure on services in China was 12,114 yuan, a 14.4% increase from the previous year, accounting for 45.2% of per capita consumer expenditure. To better meet the growing service consumption needs of the Chinese people, in August 2024, the Chinese government issued the "Opinions on Promoting High-Quality Development of Service Consumption," which clearly proposes to "focus on improving service quality, enriching consumption scenarios, and optimizing the consumption environment, to stimulate the internal dynamics of service consumption with innovation, and to cultivate new growth points in service consumption." This provides fundamental guidance and important direction for optimizing and expanding service supply and releasing the potential of service consumption. However, it cannot be ignored that there are still obvious shortcomings and weaknesses in China's service consumption, such as insufficient high-quality supply, an urgent need to optimize the consumption environment, and significant regulatory challenges, which seriously restrict the improvement of China's overall level of service consumption. Alongside the rapid growth of service consumption, digital technologies, represented by modern information technology, have shown a leapfrog development trend in recent years, increasingly penetrating the economy, society, and daily life in a comprehensive and in-depth manner. In particular, the network effects and platform effects brought about by digital technology are constantly pushing the limits of information transmission speed, accelerating the transparency of market information and the digitalization of service consumption, and providing rare development opportunities for the innovation of emerging service consumption scenarios and business forms. Against this backdrop, the key issue this paper intends to explore is whether, under the empowerment of new-generation information technology, market transparency in China can promote the improvement of service consumption levels by accelerating information sharing. We hope that the research conclusions will have important theoretical value and practical significance for China to release the potential of service consumption.

1.2 Literature Review

Research directly related to the theme of this paper can be categorized into three main types:

First, there are studies on the impact effects of market transparency. The academic community has been engaged in a vigorous debate on the effects of market transparency.

Some research suggests that when market transparency increases, informed parties with an information advantage tend to submit orders that are more favorable to themselves, abandoning equilibrium trading strategies; to mitigate the adverse selection risks that result, uninformed parties also abandon equilibrium strategies in favor of more conservative orders, leading to a significant decrease in market efficiency ^[1]. However, other studies argue that market transparency can alleviate information asymmetry, eliminate misinformation and friction, and improve the misallocation phenomena where low-quality product enterprises mislead consumers with their commercial reputation and high-quality product enterprises struggle to gain consumer trust due to stereotypes, thereby overall enhancing the market profitability of enterprises ^[2].

Second, there are studies on the influencing factors of service consumption. The most widely responded to by scholars is the stimulating effect of the digital economy on service consumption. However, different scholars have slightly different research perspectives. Some scholars have analyzed the impact of digital economic development on different types of service consumption from a benchmark effect and heterogeneity perspective, finding that the role of China's digital economic development on medical and health consumption is the most significant, followed by transportation and communication consumption, and finally, education, culture, and entertainment consumption ^[3]. Other scholars have calculated China's digital economic development index and, using the Spatial Durbin model, found that digital economic development not only promotes the growth of local residents' service consumption expenditure but also has a significant positive spatial spillover effect on the service consumption expenditure of residents in neighboring areas^[4].

Third, there are studies on specific paths to stimulate China's service consumption. Based on the theory of resource integration, from a horizontal perspective, improving the marginal productivity of circulation service factors is beneficial for leveraging the scale economic advantages of China's circulation services and promoting the growth of circulation service consumption; from a vertical perspective, the integration of circulation service factors can enhance the efficiency of the circulation industry, drive the development of new business forms such as China's e-commerce industry, and thus improve the level of China's circulation service consumption^[3].

Overall, existing literature has not reached a consensus on the impact effects of market transparency, and few studies have conducted a correlation analysis and dissection of the causal pathways between market transparency and service consumption levels. Therefore, this paper intends to use panel data from 30 provinces in China to explore the impact of market transparency on service consumption levels and its mechanisms. Compared to existing literature, the marginal contributions of this paper are mainly: first, attempting to clarify the causal relationship and internal mechanisms between market transparency and service consumption levels in China; second, enriching and extending the research results of the antecedent variables of market transparency to some extent; and third, providing possible practical suggestions for promoting the

improvement of market transparency and the high-quality development of service consumption in China.

2 Theoretical Foundation and Research Hypotheses

2.1 Market Transparency and Service Consumption Level

Service consumption level reflects the volume of service products consumed by individuals or households within a certain period and is one of the important indicators for measuring the upgrading of residents' consumption. Market transparency is a concept involving information disclosure, fair trading, and investor protection. It requires that information in the market (including product prices, trading conditions, market demand, and supply, etc.) is open, transparent, and easily accessible to all participants. Market transparency helps to improve the effective operation and fair competition of the market, reduce the occurrence of information asymmetry and fraudulent behavior, and enhance market efficiency and resource allocation. Specifically, market transparency has the following positive impacts on the service consumption level:

Firstly, it enhances consumer confidence. When consumers can easily obtain all relevant information about services, their trust in the service market will significantly increase, which encourages them to engage more actively in service consumption.

Secondly, it promotes fair competition. The transparency of market information ensures that all service providers compete under the same conditions, which helps prevent unfair competition and market monopolies in the service consumption market, thereby improving market efficiency and driving sustained growth in service consumption.

Thirdly, it reduces search costs. Compared to an opaque market, a transparent market environment can help consumers more easily compare the prices and service quality of different service providers, reducing the time and effort spent in finding suitable services, improving service quality and consumption efficiency, and driving an overall increase in the level of service consumption.

Lastly, it improves the quality-of-service products. To maintain competitiveness in a transparent market, service providers often improve service quality to attract and retain customers, which helps to enhance service variety and quality in all aspects, thereby stimulating consumers' desire for service consumption and driving the growth of service consumption.

Therefore, the first hypothesis of this paper is proposed: **In China, Market transparency can significantly enhance the level of service consumption.**

2.2 The Mediating Effect of Information Sharing

Information is a vital resource in the digital economy era, and information sharing refers to the process of exchanging and utilizing information among different individuals, organizations, or systems. Prior research indicates that information asymmetry or opacity is a significant cause of consumer stereotypes about businesses and friction between businesses, leading to a detrimental competitive market environment that discourages innovation and entrepreneurship among market players and reduces consumer enthusiasm, severely harming the high-quality development of industries^[5]. Therefore, market transparency is considered a potent remedy for driving the development of emerging industries and unlocking consumer potential. Specifically:

Firstly, market transparency enhances the fairness of information acquisition, ensuring that all participants have access to the same level of information, reducing information asymmetry and minimizing the occurrence of insider trading and other improper market behaviors. This allows market participants to engage in service transactions on a more equitable basis, thereby stimulating the growth of service consumption.

Secondly, it promotes the rapid dissemination of information. Market transparency encourages the swift flow of information, breaking down barriers and removing restrictions on information sharing. This helps market participants more easily assess the risks and benefits of transactions, react more quickly, and thus accelerates service transaction efficiency, shortens the service consumption cycle, and drives the growth of service consumption levels.

Thirdly, it fosters innovation and competition. A transparent market environment encourages service providers to share development experiences and emerging technological knowledge, promoting industry innovation and healthy competition. This can boost service providers' confidence and motivation to gain a competitive edge through innovation and helps market participants make more rational decisions in healthy competition, improving the efficiency of resource allocation in the service market and driving service supply and consumption, thereby enhancing the potential for service consumption.

Therefore, the second hypothesis of this paper is proposed: **Information sharing plays a significant mediating role in the impact of market transparency on service consumption levels.**

3 Research Design

3.1 Model Design

Considering the heterogeneity of market transparency in terms of time and region, this paper employs a difference-in-differences approach with dual fixed effects for both time and region to construct the following base effect model and mediating effect model to test the impact of market transparency on service consumption levels and the mediating effect of information sharing:

$$Fwx_{it} = \gamma_0 + \gamma_1 Stm_t + \gamma_2 Col_{it} + c_i + \partial_t + \theta_{it} \quad (1)$$

$$Xgp_{it} = \beta_0 + \beta_1 Stm_t + \beta_2 Col_{it} + c_i + \partial_t + \theta_{it} \quad (2)$$

$$Fwx_{it} = \omega_0 + \omega_1 Stm_t + \omega_2 Xgp_{it} + \omega_3 Col_{it} + c_i + \partial_t + \theta_{it} \quad (3)$$

In the equations, i represents the province, t represents time; Fwx_{it} is the level of service consumption, Stm_t is market transparency, Xgp_{it} is information sharing, Col_{it} is the control variables, γ_1 is the net effect coefficient, ω_2 is the mediating effect coefficient, c_i, ∂_t are the fixed effects for region and time, respectively, and θ_{it} is the random error term. The measurement methods for the variables are as follows:

Firstly, the measurement of the dependent variable, the level of service consumption. Service consumption refers to consumption that does not directly form physical assets but is used for service-related purposes ^{[6][7]}, including consumption in transportation, communication, entertainment, and healthcare. Considering data completeness and availability, this paper mainly studies the service consumption level of urban residents, specifically referring to the practices of scholars such as Zeng Shihong et al. (2019), by measuring service consumption levels through "per capita service consumption expenditure of urban residents."

Secondly, the measurement of the core explanatory variable, market transparency. It is generally believed that in a competitive legal environment with transparent trading norms and a sound commitment mechanism, the market is conducive to guiding market entities to operate within the legal and regulatory framework, reducing information asymmetry, and thus forming a transparent market. Therefore, following the research of Gao Ziming ^[5], the number of judicial case documents related to market competition published in each region is used as a proxy variable for market transparency.

Thirdly, the measurement of the mediating variable, information sharing. Information sharing must be supported and safeguarded by advanced information technology, so this paper, referring to the research of Feng Hua et al. (2020)^[8], takes the logarithm of

regional information infrastructure investment as a proxy indicator for information sharing.

Lastly, the measurement of control variables. Referring to the research of Xu Ziyang et al. (2024)^[9], variables such as market openness level (Sck), labor productivity (Lsc), income level (Srp), and population birth rate (Csl) are controlled. Following the measurement methods of the aforementioned literature, Sck is reflected by the $\frac{\text{Actual Utilization of Foreign Capital}}{\text{Regional GDP}}$, Lsc is reflected by the result of $\frac{\text{Regional GDP}}{\text{Total number of Employees in Society}}$, Srp is measured by the per capita disposable income of urban residents, and Csl is reflected by $\frac{\text{Number of Births within the Year}}{\text{Average Population Number within the Year}}$.

3.2 Data Description

In consideration of the completeness and reliability of the data, this study focuses on 30 provinces in China (excluding Hong Kong, Macao, Taiwan, and the Tibet Autonomous Region) from 2012 to 2022. The data used in this paper primarily comes from the "China Statistical Yearbook", "China Population and Employment Statistical Yearbook" and the official websites of various municipal and provincial statistical bureaus in China for the years 2012 to 2022. To account for the effects of price fluctuations, the data for certain variables have been deflated using the price index with 2012 as the base year. This adjustment ensures that the analysis reflects real changes in the variables of interest rather than nominal changes that could be attributed to inflation or other price-level shifts. This approach is crucial for obtaining accurate and comparable economic indicators across the study period.

4 Analysis of Research Results

4.1 Analysis of Variable Stationarity

To prevent potential spurious regression phenomena, this paper employs the Levin-Lin-Chu (LLC) test and the Im-Pesaran-Shin (IPS) test to examine the stationarity of the variables. As shown in Table 1, the variables Fwx (the level of service consumption), Stm (market transparency), Xgp (information sharing), Sck (market openness level), Lsc (labor productivity), Srp (income level), and Csl (population birth rate) all pass the stationarity tests, indicating good stationarity and suitability for regression analysis.

Table 1. Results of Stability Test[†]

Variable	LLC Test	IPS test	Result
<i>Fwx</i>	0.475***(0.185)	1.546***(0.096)	stable
<i>Stm</i>	0.932***(0.125)	1.643***(0.118)	stable
<i>Xgp</i>	0.364***(0.132)	0.002***(0.000)	stable
<i>Sck</i>	1.062***(0.295)	1.435***(0.196)	stable
<i>Lsc</i>	0.605***(0.226)	1.623***(0.114)	stable
<i>Srp</i>	1.562***(0.498)	1.598***(0.473)	stable
<i>Csl</i>	1.059***(0.304)	1.043***(0.298)	stable

[†]Note: The symbols ***, **, and * correspond to statistical significance levels of $P < 1\%$, $P < 5\%$, and $P < 10\%$, respectively. The values in parentheses represent the standard errors, and this convention applies throughout the paper.

4.2 Correlation Analysis

Based on the theoretical analysis above, the enhancement of service consumption levels is related to the degree of market transparency on one hand, and on the other hand, it mainly depends on the level of information sharing. Therefore, before conducting formal regression analysis, scatter plots are drawn to preliminarily test the theoretical hypotheses regarding the relationship between market transparency and service consumption levels, as well as the relationship between information sharing and service consumption levels. Fig. 1 错误!未找到引用源。⁽¹⁻¹⁾ shows a significant positive correlation between market transparency and service consumption levels, indicating that an increase in market transparency stimulates service consumption, thus providing preliminary support for the first hypothesis of this paper. Fig. 1⁽¹⁻²⁾ also shows a significant positive correlation between information sharing and service consumption levels, indicating that information sharing is an important factor affecting service consumption levels, thus providing preliminary support for the second hypothesis of this paper.

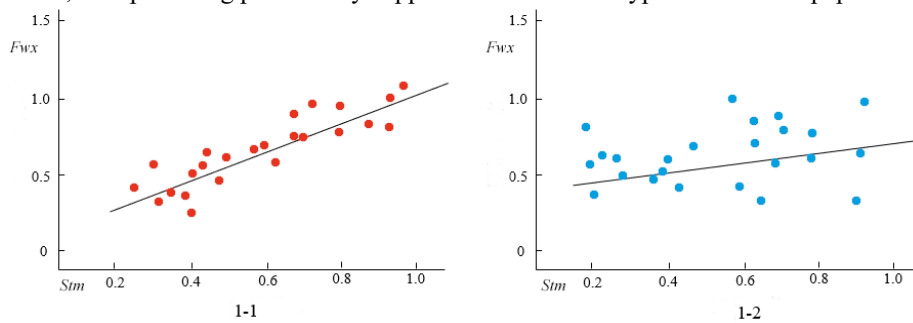


Fig. 1. Scatter Plot Illustrating the Relationship between Market Transparency, Information Sharing, and Service Consumption Disparities.

4.3 Baseline Regression Analysis

Table 2 presents the results of models 1 to 4, all of which employ fixed effects models to analyze the impact of market transparency on service consumption levels. To enhance the accuracy of the estimates, control variables and time and region fixed effects are sequentially included. The results show that in all estimation scenarios, the core explanatory variable, market transparency, is significantly positive at the $P < 1\%$ statistical level. This is consistent with the previous correlation analysis and indicates that market transparency can effectively improve service consumption levels, thus confirming the first hypothesis of this paper.

Table 2. Results of Baseline Test

Variable	Model 1	Model 2	Model 3	Model 4
<i>Stm</i>	0.485***(0.116)	0.492***(0.136)	0.671***(0.336)	0.629***(0.215)
<i>Con</i>	1.472**(0.136)	5.972*** (2.079)	7.452** (2.171)	4.662** (2.308)
<i>Controlled Variable</i>	Controlled	Controlled	Uncontrolled	Controlled
<i>CITY</i>	Controlled	Uncontrolled	Controlled	Controlled
<i>TIME</i>	Uncontrolled	Controlled	Controlled	Controlled
<i>R2</i>	0.842	0.849	0.857	0.881

4.4 Robustness Analysis

Drawing on the research experiences of Xu Ziyang et al. (2024), variables may be subject to interference from factors such as temporal lag, reverse causality, and sample quality, which could compromise the robustness of the conclusions. Therefore, considering the advantages and disadvantages of various common robustness testing methods and in conjunction with the research context, this paper adopts the following three methods for robustness testing:

Firstly, acknowledging the potential lag effect of market transparency on service consumption levels, this paper applies a one-period lag to the dependent variable, service consumption levels, and then re-estimates the model using the sample, with the results shown in Table 3, Model 5.

Secondly, to mitigate the issue of reverse causality between market transparency and service consumption levels, this paper utilizes the Generalized Method of Moments (GMM) model as a substitute for the original fixed effects model to test the conclusions, with the results shown in Table 3, Model 6.

Thirdly, to enhance the reliability of the sample, a winsorization process is applied to all continuous variables in the paper, trimming the top and bottom 1%, with the results shown in Table 3, Model 7.

Overall, in Models 5 to 7, the coefficients for market transparency are all significantly positive at the $P < 1\%$ statistical level, indicating that the positive impact of market transparency on service consumption levels does indeed exist, thereby reaffirming the first hypothesis of this paper.

Table 3. Results of Robustness Test

Variable	Model 5	Model 6	Model 7
<i>Stm</i>	0.559***(0.271)	0.623***(0.168)	0.419***(0.125)
<i>Con</i>	1.206***(0.425)	0.968***(0.348)	1.106***(0.276)
<i>Controlled Variable</i>	Controlled	Controlled	Controlled
<i>CITY</i>	Controlled	Controlled	Controlled
<i>TIME</i>	Controlled	Controlled	Controlled
<i>R2</i>	0.825	0.847	0.852

4.5 Mediating Effect Mechanism Analysis

Information sharing is not only the foundation for establishing cooperative and trusting relationships between enterprises but also an important channel for consumers to understand information about goods and services. Information sharing can effectively transmit the empowering effects of market transparency, leading to an increase in service consumption levels. To test the mediating effect of information sharing, equations (2) and (3) are used to analyze the mechanism by which market transparency affects service consumption levels. In Table 4, Model 8, the estimated coefficient for market transparency is significantly positive at the $P < 1\%$ statistical level, indicating that market transparency can promote information sharing. In Table 4, Model 9, both the estimated coefficients for market transparency and information sharing are significantly positive, indicating that market transparency can indirectly enhance service consumption levels by promoting information sharing, thus confirming the second hypothesis of this paper.

Table 4. Results of Robustness Test

Variable	Model 8	Model 9
	<i>Xgp</i>	<i>Fwx</i>
<i>Stm</i>	0.619*** (0.165)	0.563*** (0.273)
<i>Xgp</i>		0.423*** (0.127)
<i>Controlled Variable</i>	Controlled	Controlled
<i>CITY</i>	Controlled	Controlled
<i>TIME</i>	Controlled	Controlled
<i>R2</i>	0.834	0.871

5 Research Conclusions and Policy Recommendations

5.1 Research Conclusions

The high-quality development of service consumption not only creates employment opportunities and improves the quality of life for residents but also contributes to the stable growth of the Chinese economy and enhances regional innovation vitality. This paper, from the perspective of market transparency and information sharing, uses panel data from 30 provinces in China from 2010 to 2022 to construct an econometric model to empirically analyze the factors affecting service consumption levels. The results indicate the following:

Firstly, market transparency can effectively enhance service consumption levels in China. Specifically, the estimated coefficient for market transparency only experiences slight changes in magnitude before and after the inclusion of control variables and time and region fixed effects, with no significant change in the level of significance. Moreover, this conclusion remains robust after a series of robustness tests, with the coefficient for market transparency consistently significant and positive, indicating a high level of robustness for this finding.

Secondly, the mechanism test reveals that market transparency primarily increases service consumption levels through the mediating effect of information sharing. This finding suggests that in the process of developing service consumption, China needs to strengthen the construction of information infrastructure and continuously improve the level of information sharing.

Thirdly, the examination of control variables shows that the factors affecting service consumption levels are diverse and complex, with market openness, labor productivity,

income levels, and population birth rates all potentially impacting service consumption levels.

5.2 Policy Recommendations

To further enhance the level of service consumption in China, this paper, in conjunction with the aforementioned research conclusions, proposes the following policy recommendations:

Enhance Market Transparency through Regulatory Reform

Firstly, the Chinese government needs to establish clear and transparent market rules to guide market entities in conducting compliant transactions, reducing market uncertainty due to unclear regulations.

Secondly, the Chinese government should accelerate the construction of institutional and legal frameworks. In accordance with the rule of law, it should expedite the improvement of market supervision-related systems and regulations, and build a new regulatory mechanism based on credit. By collecting, publicizing, and applying credit information, regulatory efficiency can be increased, the market and innovation environment can be improved, market operation costs can be reduced, and operational efficiency can be enhanced.

Thirdly, the Chinese government should promote the construction of standards. It should expedite the development of a credit supervision standard system for business entities, encourage the lawful formulation of local standards, and enhance the standardization level of regulation.

Boost Information Sharing via Infrastructure Development

Firstly, the Chinese government needs to increase investment in network and communication infrastructure, accelerate the layout of information infrastructure in remote and small-to-medium-sized cities, support the research and promotion of emerging information technologies such as 5G, big data, and cloud computing, and promote the digital transformation of enterprises and the enhancement of social governance capabilities.

Secondly, the Chinese government should strengthen the key core technologies, optimize the design of investment and financing mechanisms, enrich application scenarios, and improve China's overall information network governance level.

Thirdly, the Chinese government should enhance the publicization of information related to service consumption, guide honest and compliant operations, improve service consumption standards, and rely on relevant websites and the National Enterprise Credit Information Publicity System to strengthen the collection and publicization of

credit information related to business entities, such as registration, administrative licensing, and administrative penalties.

Advance Service Industry Opening and Diversify Consumption Options

Firstly, China needs to strengthen policy guarantees. The Chinese government needs to provide solid policy support for the high-level opening of China's service industry by strengthening fiscal, tax, and financial support, consolidating talent team support, and improving statistical monitoring levels.

Secondly, China should promote the opening of the service industry market. The Chinese government needs to eliminate administrative monopolies in the service industry, encourage social and foreign capital to participate in the development of the service industry, and improve the market environment for fair competition.

At last, China should foster the growth of new types of consumption. The Chinese government should timely promote the development of new types of consumption such as digital, green, and healthy consumption, stimulate the internal dynamics of service consumption, and cultivate new growth points for service consumption.

References

1. Fang Li-bing, Ding Jing: Transparency and market efficiency: A study of adaptive learning with asymmetric information. *Journal of Management Sciences in China* 20(07), 43-56 (2017).
2. Hu Runzhe, Wei Junying, Chen Yine: An Empirical Study on the Impact of Digital Economy Development on Rural Residents' Service Consumption. *Statistics & Decision* 38(17), 61-66 (2022). DOI: 10.13546/j.cnki.tjyjc.2022.17.012.
3. Luo Zhongqing, Liu Kunxin: Research on the Integrated Development of Circulation Service Consumption Based on Resource Integration Theory. *Journal of Commercial Economics* (05), 28-32 (2022).
4. Li Hao, Huang Fanhua: Can the digital economy promote service consumption?. *Modern Economic Research* (03), 14-25+123(2022). DOI: 10.13891/j.cnki.mer.2022.03.014.
5. Gao Ziming. Market transparency, product quality information, and corporate profitability. *Economic Review*(04), 35-50(2023).DOI:10.19361/j.er.2023.04.03.
6. Zeng Shihong et al.: Definition and Application Research of Housing Security Object in China - Comparisons of Measuring Methods of the Affordability of common people. *Price: Theory & Practice* (03), 37-40(2019). DOI:10.19851/j.cnki.cn11-1010/f.2019.03.008.
7. Lewbel A.: The Rank of Demand Systems: Theory and Nonparametric Estimation. *Econometrica* 59(3), 711-730(1991).
8. Feng Hua et al.: The Interaction between Supply Chain Governance Mechanisms and Supply Chain Performance: Based on the Mediating Effects of Information Sharing and the Moderating Effects of Information Technology Level. *Chinese Journal of Management Science* 28(02), 104-114(2020). DOI: 10.16381/j.cnki.issn1003-207x.2020.02.010

9. Xu Ziyang et al.: Impact of Human Capital on Service Consumption Level—A Perspective of Urban-rural Residents' Service Consumption Gap. *Research on Economics and Management* 45(06),19-37(2024). DOI: 10.13502/j.cnki.issn1000-7636.2024.06.002.