

Research on the Mechanism of Rural E-commerce's Impact on Consumption Upgrading of Rural Residents

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Abstract: This paper aims to explore the mechanism through which rural e-commerce influences the consumption upgrading of rural residents. With the popularization of the Internet and the rapid development of e-commerce, rural e-commerce has emerged as a vital force driving the economic transformation and upgrading of rural areas. By enhancing rural residents' income levels, optimizing the consumption environment, transforming consumption concepts, and enriching consumption choices, rural e-commerce has significantly promoted the consumption upgrading of rural residents. Specifically, rural e-commerce not only provides rural residents with more diversified goods and services, reducing consumption costs, but also promotes the sale of agricultural products through increased online sales channels, thereby enhancing farmers' operating income. Additionally, the development of rural e-commerce has driven the emergence of related industries such as logistics and finance, further enriching the supply in rural markets and stimulating the consumption potential of rural residents. Based on existing theories, this paper systematically analyzes the mechanism of rural e-commerce's impact on the consumption upgrading of rural residents and proposes corresponding countermeasures and suggestions, aiming to provide references for relevant departments in formulating policies.

1. Introduction

With the widespread adoption of Internet technology and the rapid development of e-commerce, rural e-commerce, as an emerging economic form, has risen rapidly, not only transforming traditional rural business models but also becoming a vital force in promoting the economic transformation and upgrading of rural areas. In the face of the urgent demand for consumption upgrading among rural residents, studying how rural e-commerce facilitates this process holds significant importance. This paper aims to delve deeply into the mechanisms by which rural e-commerce influences the consumption upgrading of rural residents. By reviewing relevant domestic and international research findings, analyzing the current development status of rural e-commerce and its potential role in consumption upgrading, this paper endeavors to fill existing research gaps and provide theoretical support and practical guidance for policy formulation and operational implementation.

2. Theoretical Basis and Conceptual Definitions

2.1 Concept and Characteristics of Rural E-commerce

Rural e-commerce, also known as rural electronic commerce, refers to the general term for commodity transactions and service activities conducted in rural areas utilizing modern information technology such as the Internet and mobile communication. Its characteristics are primarily manifested in the following aspects: Firstly, rural e-commerce breaks the geographical limitations of traditional rural markets, enabling agricultural products to directly connect with consumers nationwide and even globally, thereby expanding sales channels. Secondly, it reduces transaction costs and improves transaction efficiency, making it more convenient for farmers to access market information and adjust production structures.^[1] Thirdly, rural e-commerce promotes the integrated

development of rural industries, driving the emergence of related sectors such as rural logistics, finance, and tourism. Lastly, it advances rural informatization, enhancing rural residents' information literacy and Internet application capabilities.

2.2 Definition and Measurement Criteria of Consumption Upgrading

Consumption upgrading refers to the phenomenon where, with socio-economic development and the improvement of residents' income levels, consumers raise higher requirements for the quality, variety, and functions of goods and services, leading to an upgrade in consumption structure and an increase in consumption levels. The measurement criteria for consumption upgrading typically encompass the following aspects: Firstly, the optimization of consumption structure, manifested in the decline of the Engel's Coefficient, indicating a reduction in the proportion of basic living expenses in total consumption expenditures and an increase in the proportion of service-oriented expenditures such as education, culture, entertainment, and healthcare. Secondly, the improvement of consumption quality, as consumers demand higher-quality goods and services, pursuing branded, personalized, and customized consumption. Thirdly, the transformation of consumption patterns, with online consumption, mobile payments, and other emerging consumption methods gradually gaining popularity, and consumers placing greater emphasis on convenient and efficient consumption experiences.^[2]

2.3 Construction of Related Theoretical Frameworks

1) The Relationship Between E-commerce and Economic Development: As an emerging economic form, e-commerce significantly promotes economic development. On the one hand, e-commerce reduces transaction costs and improves transaction efficiency, facilitating the optimal allocation of market resources. On the other hand, the rapid development of e-commerce drives the emergence of related industries, such as logistics, payment, and finance, forming new economic growth points. Simultaneously, e-commerce promotes the development of international trade, advancing the process of economic globalization.

2) Income Growth and Changes in Consumption Structure: Income serves as the foundation for consumption, and its increase is a crucial driver of consumption upgrading. As residents' incomes rise, their purchasing power strengthens, leading to increased demand for goods and services. Driven by income growth, the consumption structure undergoes changes, manifested in the decline of the proportion of basic living expenses and the increase in the proportion of service-oriented expenditures such as education, culture, entertainment, and healthcare. This transformation in consumption structure represents an essential aspect of consumption upgrading.

3) Optimization of Consumption Environment and Transformation of Consumption Concepts: The optimization of the consumption environment and the transformation of consumption concepts are also important factors driving consumption upgrading. The optimization of the consumption environment encompasses the standardization of market order, the protection of consumer rights and interests, and the transparency of consumer information. These measures can enhance consumer confidence and stimulate consumption potential. Meanwhile, with the development of social culture and the improvement of consumer education levels, consumers' consumption concepts are evolving, placing greater emphasis on quality, health, environmental protection, and other aspects of the consumption experience. This transformation in consumption concepts further propels the process of consumption upgrading.^[3]

3. Analysis of the Impact Mechanism of Rural E-commerce on Consumption Upgrading among Rural Residents

3.1 Enhancing Rural Residents' Income Levels

Analysis of the Agricultural Products' Upstream Mechanism: The upstream mechanism for agricultural products serves as a vital path for rural e-commerce to boost rural residents' income. This mechanism connects rural producers with urban consumers through e-commerce platforms,

breaking the geographical constraints of traditional agricultural product sales and enabling agricultural products to reach a broader market directly. In this process, e-commerce platforms not only provide a showcase and sales outlet for agricultural products but also utilize big data analysis and precision marketing to help farmers better understand market demands, adjust production structures, and increase the added value of agricultural products. Additionally, these platforms facilitate agricultural product branding, enhancing their market competitiveness and ultimately leading to an increase in agricultural product values and farmers' incomes.

Contribution of E-commerce Platforms to Farmers' Operating Income: The contribution of e-commerce platforms to farmers' operating income is manifested in several aspects. Firstly, they reduce transaction costs associated with agricultural products, including information search and negotiation costs, enabling farmers to sell their products at lower costs. Secondly, e-commerce platforms expand sales channels for agricultural products, exposing farmers to more potential buyers and increasing sales volumes. Thirdly, through big data analysis and other technological means, these platforms assist farmers in predicting market demand changes, adjusting production strategies, and mitigating market risks, thereby ensuring stable earnings. Lastly, e-commerce platforms offer supporting measures such as financial services and logistics support, reducing farmers' operational difficulties and costs, further promoting an increase in their operating income.

3.2 Optimizing the Consumption Environment

E-commerce Platform Construction and Improvement of Rural Infrastructure: The development of e-commerce platforms not only provides convenient shopping channels for rural residents but also promotes the improvement of rural infrastructure. To support the operation and development of e-commerce platforms, rural areas need to accelerate the construction of information networks, logistics systems, and other infrastructure. The enhancement of these facilities not only provides necessary hardware support for e-commerce platforms but also drives the development of related industries like telecommunications and logistics. Concurrently, improved infrastructure enhances rural residents' quality of life by offering more convenient and efficient lifestyles. In this process, e-commerce platforms and rural infrastructure form a virtuous interaction, jointly optimizing the rural consumption environment.

Enhancement of Online Consumption Experience: Elevating the online consumption experience is crucial for optimizing the consumption environment. E-commerce platforms continually improve consumer shopping experiences by optimizing user interface designs, increasing commodity information transparency, and refining after-sales service systems. These measures enable rural residents to enjoy the convenience of online shopping while also experiencing a shopping experience comparable to offline shopping^[4]. Moreover, platforms introduce new technologies and applications to innovate consumption models and service methods, such as live streaming sales and social e-commerce, further enriching rural residents' consumption options and enhancing their satisfaction and loyalty. Through these efforts, e-commerce platforms successfully create a superior and convenient online consumption environment for rural residents.

3.3 Transforming Consumption Concepts

Dissemination of Internet Information and Popularization of Consumer Knowledge: In the Internet era, the rapid and widespread dissemination of information is unprecedented. This characteristic, driven by rural e-commerce, profoundly influences rural residents' consumption concepts. E-commerce platforms serve not only as venues for commodity transactions but also as hubs for information aggregation and dissemination. Rural residents can access abundant consumption information on e-commerce platforms, including product reviews, usage experiences, and shopping tips, which helps them better understand market trends and product performance, enabling more informed consumption decisions. Additionally, platforms guide rural residents towards more proactive and rational consumption concepts through promotional activities and coupon distribution. Furthermore, the Internet facilitates the popularization of consumer knowledge, enabling rural residents to enhance their consumption literacy and discernment through online learning and community discussions.

Modernization of Consumer Behavior Patterns: With the in-depth development of rural e-commerce, rural residents' consumer behavior patterns have undergone a modern transformation. Traditional consumption patterns were often constrained by geography and time, but rural e-commerce has broken these barriers, enabling rural residents to shop anytime, anywhere. They are no longer limited to physical store selections but prefer browsing, comparing, and purchasing products online. Concurrently, the prevalence of online payment and logistics services further facilitates rural residents' consumption experiences. These changes not only enhance rural residents' consumption efficiency but also enrich their consumption methods, enabling them to enjoy a more modern consumer lifestyle.

4. Empirical Research

4.1 Data Sources and Sample Selection

When conducting empirical research on the impact of rural e-commerce on consumption upgrading, the first step is to determine the data sources and sample selection. Data sources mainly include statistical data released by government departments, transaction data from e-commerce platforms, consumer surveys, and relevant academic research materials. To ensure the reliability and representativeness of the research results, sample selection should follow the principles of randomness, comprehensiveness, and timeliness. Specifically, a certain number of samples can be randomly selected from rural residents in different regions, with varying income levels, and age groups, while ensuring that the sample data covers the main stages of rural e-commerce development and the main trends of consumption upgrading in recent years.

4.2 Research Methodology and Model Construction

1) **Statistical Analysis Methods:** Statistical analysis serves as the foundation of empirical research. In this study, descriptive statistical analysis, correlation analysis, and other statistical analysis methods will be employed to preliminarily process and analyze the collected data. Descriptive statistical analysis is primarily used to understand the basic situation of the samples, such as the overall level of rural e-commerce development and the main manifestations of consumption upgrading. Correlation analysis, on the other hand, is used to explore the correlation between the development level of rural e-commerce and consumption upgrading indicators, providing preliminary evidence for subsequent model construction.

2) **Regression Models or Case Study Methods:** To delve deeper into the impact mechanism of rural e-commerce on consumption upgrading, this study will construct regression models for empirical analysis. Depending on the research objectives and data characteristics, suitable regression models such as multiple linear regression models or Logit/Probit models can be selected. In these models, the development level of rural e-commerce will serve as the independent variable, while consumption upgrading indicators will be the dependent variables, with the consideration of the influence of control variables.

4.3 Analysis of Empirical Results

1) **Quantitative Assessment of Rural E-commerce Development Level:** Through quantitative processing and analysis of the collected data, the overall development level of rural e-commerce can be derived. This assessment not only facilitates understanding the current state of rural e-commerce development but also provides an important basis for subsequent analysis. The assessment indicators may include the number of e-commerce platforms, transaction volumes, user base, logistics network coverage, and other aspects.

2) **Empirical Analysis of Consumption Upgrading Indicators:** During the empirical analysis phase, focus will be placed on changes in consumption upgrading indicators. By comparing and analyzing consumption upgrading indicator data across different time points or rural areas, the driving effect of rural e-commerce on consumption upgrading can be revealed. Specific indicators may include the Engel coefficient, the proportion of service consumption, per capita consumption

expenditure, and other aspects.

3) Significance Testing of Influencing Factors: To determine which factors significantly impact consumption upgrading, significance testing will be conducted. Through regression analysis and other methods, the impact coefficients and significance levels of various factors on consumption upgrading indicators can be calculated. Factors with higher significance levels can be considered to have important impacts on consumption upgrading, while those with lower significance levels require further analysis to ascertain their reasons and consider whether they should be included in the model. This process helps reveal more accurately the impact mechanism of rural e-commerce on consumption upgrading.

5. Challenges and Issues

5.1 Insufficient Infrastructure and Digital Divide

The rapid development of rural e-commerce has placed higher demands on infrastructure, yet many rural areas still face insufficient infrastructure. This is primarily manifested in incomplete information network coverage, slow internet speeds, and unstable power supply. The backwardness of infrastructure not only limits the popularization and development of rural e-commerce but also exacerbates the digital divide between urban and rural areas. Urban residents, enjoying more comprehensive information networks and convenient digital services, can participate in e-commerce activities more easily, while rural residents find it difficult to fully enjoy the convenience brought by e-commerce due to infrastructure shortcomings. This digital divide not only affects the consumption experience of rural residents but also restricts the potential release of the rural e-commerce market.

5.2 The "Last Mile" Challenge in Logistics Distribution

Logistics distribution is a crucial link in the development of rural e-commerce, but the "last mile" challenge has always been a constraint. Due to the vast territory and sparse population in rural areas, as well as inconvenient transportation, logistics distribution costs are high and inefficient. Many express companies are unwilling or unable to cover remote rural areas, resulting in the inability to deliver e-commerce goods to consumers in some areas in a timely manner. This not only affects the shopping experience of consumers but also limits the expansion of the rural e-commerce market. To address this issue, it is necessary to explore more flexible and efficient logistics distribution models, such as establishing rural logistics outlets and developing joint distribution, to reduce distribution costs and improve efficiency.

5.3 Insufficient Financial Service Support and Payment Challenges

The development of rural e-commerce cannot be separated from financial service support, but the current rural financial system is still imperfect, and insufficient financial service support has become a constraint. When participating in e-commerce activities, rural residents often need to conduct online payments and settlements. However, due to the lack of convenient payment channels and a secure payment environment, some rural residents have concerns and worries about e-commerce payments. Additionally, some rural residents have difficulty obtaining loan support due to incomplete credit records or lack of collateral, limiting their ability to engage in e-commerce entrepreneurship and expand their businesses^[5]. Therefore, strengthening rural financial service support, promoting mobile payments and other convenient payment methods, and improving credit evaluation systems are essential for promoting rural e-commerce development.

6. Countermeasures and Suggestions

6.1 Strengthen Rural Infrastructure and Digital Construction

To promote the sustainable development of rural e-commerce, the primary task is to strengthen rural infrastructure and digital construction. This includes enhancing internet coverage and speed in

rural areas to ensure that rural residents can access the internet stably and quickly, enjoying convenient online services. Simultaneously, investment in rural infrastructure such as electricity and transportation should be increased to improve rural living and production conditions, providing robust support for the smooth operation of e-commerce logistics, warehousing, and other links.

6.2 Improve Logistics Distribution System and Promote Cold Chain Logistics

Logistics distribution is a crucial link in the development of rural e-commerce. To solve the "last mile" challenge, we should expedite the improvement of the rural logistics distribution system, encouraging and supporting logistics enterprises to establish outlets in rural areas to enhance delivery efficiency and coverage. Additionally, given the perishable nature of agricultural products, we should vigorously develop cold chain logistics, constructing cold chain logistics centers and distribution networks to ensure the freshness and safety of agricultural products during transportation.

6.3 Innovate Rural Financial Services and Expand Financial Service Coverage

Financial services are an essential support for the development of rural e-commerce. To alleviate funding bottlenecks in rural e-commerce development, we should innovate rural financial service models and expand their coverage. On the one hand, financial institutions should be encouraged to increase credit support for rural e-commerce, lowering lending thresholds and interest rates to provide convenient and low-cost financing channels for rural e-commerce entrepreneurs. On the other hand, new financial services such as mobile payments and online loans should be promoted to enhance the convenience and inclusiveness of financial services.

7. Conclusion

In summary, this study comprehensively analyzes the primary mechanisms through which rural e-commerce influences the consumption upgrading of rural residents, revealing its positive contributions and key findings through empirical research. However, the study also acknowledges limitations, such as constraints in data sources and sample size, as well as deficiencies in research methods and model selection. Future research should delve deeper into the differentiated impacts of rural e-commerce across different regions and types, aiming for a more comprehensive understanding of its driving forces. Additionally, long-term tracking studies on the sustained effects of rural e-commerce on consumption upgrading, coupled with the introduction of more variables to refine research models and theoretical frameworks, will be crucial directions for further exploration in this field. Through these efforts, we can provide more solid theoretical support and practical guidance for the healthy development of rural e-commerce and the consumption upgrading of rural residents.

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