

Urban and Rural Digital Divide and Culture and Entertainment Consumption Inequality: Theoretical Mechanism, Research Progress and Future Prospects

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Abstract

In the context of the development of digital economy, due to the digital divide aggravating the inequality of urban and rural entertainment consumption, the existing research lacks the combination mechanism and system integration of this issue. Based on the knowledge gap hypothesis and the theory of innovation diffusion, this paper understands the concept of digital divide, the framework of cultural and entertainment consumption inequality, analyzes the internal mechanism of digital divide affecting cultural and entertainment consumption imbalance, and summarizes the relevant empirical studies. It is found that the existing studies have shortcomings such as single measurement index, lack of interdisciplinary integration, and lack of quantification of digital literacy and algorithm gap. Based on this, it is proposed that in the future, AIGC and digital footprint big data can be strengthened to carry out in-depth research, and policies should be improved from digital infrastructure to digital inclusion and digital literacy, standardize the operation of entertainment platforms, enrich digital cultural content, and reduce the stratification of urban and rural entertainment consumption.

Key words

Urban-rural digital divide, Inequality in entertainment consumption, Digital literacy, Information cocoons

1. Introduction

Urban-rural integration development is the inevi-

table requirement of Chinese modernization, but urban and rural areas are two independent spatial and regional carriers, and the ideal spatial state between them should

be equality, mutual benefit, and interdependence. However, the rapid development of digital economy has become the key engine of China's economic growth [1]. The urban-rural dual structure has led to a digital divide between urban and rural areas and inequality in the consumption level of residents [1]. Although the digital gap at the physical access level is narrowing, the gap at the use ability and digital literacy level has not been adequately addressed in reshaping urban and rural entertainment consumption[2].

At present, the digital economy has a promoting effect on the consumption level of residents, but there is a relative lack of systematic analysis on the inequality of material consumption and entertainment consumption of urban and rural residents. This paper reviews the relevant literature on the digital divide between urban and rural areas and the inequality of cultural and entertainment consumption level, summarizes the relevant theoretical mechanisms, and sorts out the relatively intervention measures and prospects for future research.

2. Concept Definition and Theoretical Evolution

2.1 Digital Divide

The connotation of the digital divide has been divided into three mature levels by the academic community, and presents a progressive evolution. The first is the 'digital access gap', which refers to the accessibility differences between urban and rural areas at the hardware level such as digital infrastructure and network access conditions, and is the basic manifestation of the digital gap. The second is 'the digital capability gap', which refers to the differences between urban and rural residents in digital skills, digital application capabilities and other software levels. It is the core form of the extension of the digital gap from hardware access to application capabilities. The third is 'the digital result gap', which refers to the inequality between urban and rural areas in income growth, dividend distribution and development opportunities brought about by the application of digital technology [2]. The relationship among the three is: digital access gap is the premise, digital capability gap is the intermediary, and digital result gap is the final result.

2.2 Dimension Reconstruction of Inequality in Entertainment Consumption

In traditional research, consumption scale is regarded as a single standard to measure the inequality of entertainment consumption [3]. However, with the continuous integration and development of the urban-rural economy the income of residents has increased, the living standard has been improved, and the digital culture industry has also been enriched. The connotation of cultural and entertainment consumption inequality has been changed and reconstructed. It is not limited to the inequality of consumption scale, but reflected in the stratification of consumption structure and consumption quality. In terms of consumption structure, urban residents have already started online shopping, software recharge, but rural residents still stay in offline consumption, free consumption and other methods [3]. In terms of consumption quality, entertainment consumption is becoming more intelligent and efficient, rather than a shallow single pan entertainment consumption. Therefore, with the continuous improvement of digital infrastructure, the rapid development of digital economy, the consumption mode and consumption structure of residents are also changing. The focus has shifted from differences in individual consumption scale and volume to inequalities in scale, structure, and quality [4].

2.3 Theoretical Basis

At present, the academic research on the digital divide and the inequality of entertainment consumption has formed a relatively mature theoretical system. This paper mainly relies on the theory of knowledge gap hypothesis and the theory of innovation diffusion as the theoretical support and reference of this study. At present, emerging technologies represented by big data and new media continue to emerge. Secondly, innovation diffusion theory was proposed by American scholar Everett Rogers in the book "diffusion of innovation". It is a theory that persuades people to accept new ideas, new things and new products through the media. It is inseparable from interpersonal communication and mass communication [1]. Therefore, according to these theoretical bases, the author can better explore the digital divide and the inequality of entertainment consumption.

3. The Theoretical Mechanism of Urban Rural Digital Divide Affecting the Inequality of Entertainment Consumption

3.1 Supply and Demand Matching and Transaction Cost Mechanism

In the context of the rapid development of digital technology, digital access is the core to break the physical barriers of cultural communication between urban and rural areas. The release of potential demand for entertainment in rural areas is mainly achieved through the optimization of supply and demand matching and the reduction of transaction costs, which is also a positive mechanism for digital technology to narrow the gap between urban and rural entertainment development [1].

In the field of entertainment, the optimization of supply and demand matching is mainly divided in two levels. First, the platform should reduce search costs and achieve accurate docking of needs. The establishment of a platform for the dissemination and trading of cultural products through digital technology has broken the restrictions imposed by rural residents on the search for cultural and entertainment products under geographical and environmental factors in the traditional mode, making cultural and entertainment products better promoted [1]. Second, the platform should alleviate information inequality and achieve accurate matching between supply and demand. The traditional mode can effectively alleviate the situation that rural residents get more information about civilized products, so that more entertainment products can better match the needs of rural residents through accurate information reading, so that rural residents can get a better sense of experience.

Without the development of digital technology, in the traditional mode, rural residents are difficult to meet the demand for entertainment products, while the transaction cost is also expanding. For example, time costs and transportation costs have also greatly increased the threshold for rural residents to obtain entertainment products, resulting in the long-term depression of potential entertainment demand in rural areas. Now, with the digital construction platform, on the one hand, the supply and demand of entertainment can be optimized,

so that culture can be further spread, and it also reduces the information cost for rural residents to obtain entertainment products, so that rural residents can obtain information more quickly and efficiently, and realize the precise matching of supply and demand of entertainment. On the other hand, it reduces the transaction cost for rural residents to obtain entertainment products, not only shortens the search time for entertainment products that can meet the needs of rural residents, but also reduces various links of offline transactions and improves efficiency. This has provided important support for narrowing the gap between urban and rural cultural and recreational development.

3.2 Digital Payment and Liquidity Constraint Mitigation Mechanism

The emergence of digital payment and inclusive finance is an important mechanism to ease the liquidity constraints of rural residents and tap the potential of entertainment consumption [5]. However, due to the advantages of low access threshold, high information processing efficiency, low transaction costs and relatively balanced resource allocation, digital inclusive finance provides new ideas and opportunities for promoting rural residents' entertainment consumption [6]. Moreover, compared with traditional payment methods, such as cash payment, mobile payment is more convenient and convenient.

Therefore, liquidity can better restrict the constraints of rural residents on the non-rigid consumption of entertainment products [5]. In the face of traditional financial services, digital financial literacy plays a dual role in releasing liquidity constraints by reducing the threshold of credit access and optimizing the efficiency of capital management, thus promoting the transformation of rural residents' demand for entertainment consumption from passive inhibition to active release, and providing core support for the release of entertainment consumption potential [5].

How to ease the constraints of mobile payment can be elaborated from two aspects. On the one hand, the emergence of mobile payment reduces the dependence of rural residents on cash, reduces the cash cost and transaction cost of rural residents, and can solve the problem of rural residents' consumption due to payment

problems. On the other hand, relying on the digital payment platform, digital inclusive finance provides low threshold financial support for rural residents, effectively making up for the shortage of traditional payment methods.

When the liquidity constraint is effectively alleviated, rural residents are no longer limited to the financial pressure in the field of entertainment consumption, and their consumption information and consumption desire have also been improved. The demand for entertainment consumption, which had been suppressed due to the small amount of funds and consumer questions, was gradually released, which increased the participation of rural residents in entertainment consumption. This mechanism has finally promoted the narrowing of the gap between urban and rural entertainment consumption.

3.3 Digital Literacy and the Transformation Mechanism of Cultural Capital

With the development of digital technology, entertainment platforms are becoming more and more popular. Although urban and rural residents have obtained equal opportunities for entertainment consumption, due to the structural differences in digital literacy between urban and rural residents, there has gradually emerged a "digital divide" of unequal entertainment consumption. The mechanism is the differential impact of digital literacy on the efficiency of cultural capital transformation [7].

Gilster put forward the concept of "digital literacy" in 1997, and it has rapidly developed into a hot topic [7]. With the in-depth implementation of China's digital village construction, rural residents' digital literacy has also become the focus of scholars' attention. As an important bridge for the accumulation of entertainment capital in the digital era, digital literacy has its core competencies such as information retrieval and content identification, which will affect the efficiency and quality of transforming entertainment resources into entertainment capital. The theory of cultural capital provides a core framework for the value transformation mechanism of cultural resources.

There are obvious differences in digital literacy between urban and rural residents. Urban residents have

high digital literacy, high-quality entertainment consumption concept, and have a certain accumulation of cultural capital, which provide a good foundation for urban residents' digital literacy [8,9]. Therefore, with the support of digital technology, urban residents have better consumption decision-making ability. On the contrary, rural residents are easily degraded in the digital entertainment market due to the backwardness of digital technology and the lack of single information channels, which is difficult to meet the consumption needs of rural residents, thus forming a "digital gap" between urban and rural entertainment consumption.

This difference in the accumulation of cultural capital between urban and rural areas has gradually evolved from "digital dividend" to "digital divide"[8,9]. The high digital literacy and high-quality entertainment consumption of urban residents enable them to obtain higher quality entertainment resources, so that the high-quality consumption experience can further strengthen the level of digital consumption decision-making. This series of advantages continuously enlarge the digital dividend. However, due to low literacy, low consumption quality and backward capital accumulation, the rural residents should have equal opportunities. Due to their own lack of conditions, the gap between urban and rural cultural and entertainment consumption has been expanding, forming a negative mechanism of inequality.

3.4 Algorithm Recommendation and "Information Cocoon Room" Mechanism

"Information cocoon room" was proposed by Cass R. Sunstein, a professor at Harvard University in the United States. He used the "personal daily" as a metaphor for Internet users' choice of content of interest according to their own preferences in massive amounts of information, while ignoring other information, and forming a self closed state of information in the long run, that is, "information cocoon room" [10]. The current mechanism of short video and information flow platform precisely positions and pushes the logic of user behavior. While improving the user experience, it has produced "information cocoon room", which is different for urban and rural residents' contact with the entertainment industry [10]. The platform allows a user to accu-

rately match the content they are interested in according to the flow oriented mechanism such as the length of time a user stays in a certain field and likes content, which will lead to information homogeneity and form a single closed environment.

Such a mechanism provides independent space between different groups in the urban-rural dual structure. For rural residents, this will lead to narrower information flow and fall into a vicious circle of Pan entertainment consumption [11]. Urban residents will form a relatively excellent level in the high-quality cultural resources. This not only forms the concept of mutual isolation and gap, but also exacerbates the differences in cultural value literacy between urban and rural areas.

4. Progress and Empirical Evidence of Existing Empirical Research

4.1 Progress in Measurement System and Method

The research on the digital divide between urban and rural areas and the inequality of entertainment consumption is an important basis for the study of social stratification and cultural equity in the digital age. Its core is to build a scientific and comparable measurement system, and transform abstract concepts into observable and analyzable indicators. In the early stages, Internet penetration rates and infrastructure coverage were the primary measures, reflecting the gap at the level of access gap; The follow-up research gradually penetrated into the utilization rate of the Internet of things, and the function utilization degree was used as an indicator to reflect the different levels of the use gap [11]. So far, the authors have begun to further study digital skills, information processing capabilities and other aspects, reflecting the gap between urban and rural groups in digital literacy.

For the measurement of "cultural and entertainment consumption inequality", existing studies analyze it from two aspects: consumption scale and consumption quality. In terms of scale, Gini coefficient and Theil index are often used to measure the degree of inequality in urban and rural entertainment consumption and reveal

the gap in total consumption. In terms of quality, consumption type, demand and other behaviors are often used as alternative variables to form the "entertainment consumption quality index", which reflects the differences in entertainment consumption between urban and rural residents. However, the current research mainly focuses on the consumption scale and access behavior, the preference of entertainment consumers, and the lack of attention to the accumulation of cultural capital. The macro index is out of touch with the micro index, and it is difficult to show the gap between urban and rural residents caused by mechanisms such as algorithm recommendation and information cocoon house.

4.2 Discussion on Heterogeneity Characteristics

The digital divide between urban and rural areas and the inequality of cultural and entertainment consumption level are not homogeneous phenomena, but the heterogeneous characteristics of different groups in different regions, including age, income and cultural level. From the perspective of age, the rural elderly and left behind children are two vulnerable groups. They are facing a more serious dilemma, due to the lack of digital skills and hardware equipment. Moreover, the use of the Internet is mostly focused on short videos, live broadcasts and other content, which makes them prone to excessive addiction and difficult to access high-quality entertainment resources. Left behind children in a homogeneous environment have limited aesthetic preferences and are difficult to accept good cultural and educational resources, which has deepened the generation gap between urban and rural groups.

At the income level, different income groups have different levels of cultural consumption. Low income groups' low income leads to low consumption level and low consumption demand, so it is difficult to upgrade to high-quality entertainment consumption. Although the middle-income group has certain consumption ability, it is difficult to accurately locate high-quality paid content due to algorithm push, and consumption upgrading is limited. Moreover, high income groups tend to have high-quality entertainment consumption resources, while urban high-income groups and rural high-income groups also have certain differences due to geographical

restrictions, and it is still difficult to break through the bottleneck of entertainment consumption.

5. Limitations and Challenges of Existing Research

5.1 Extensive Measurement Dimension

At present, the existing research on the measurement dimension of digital inequality is relatively limited, which is mainly reflected in the fact that the research mostly relies on the access rate and Internet penetration rate in the macro research Yearbook, as well as the comparative analysis based on the traditional network penetration rate. Although these data can directly reflect the results, they still remain at the "access" level without in-depth measurement, making it difficult to obtain more accurate data to verify the problem [12].

More importantly, current research generally lacks accurate micro quantification of deep-seated indicators such as "algorithm gap" and "digital literacy". Specifically, the algorithm gap refers to the digital inequality in accessing, applying, and benefiting from algorithm technologies across different countries, regions, occupations, and demographic groups. This disparity is driven by varying levels of information mastery, economic conditions, education, and geographical location. Consequently, it leads to unequal opportunities, divergent innovation capabilities, uneven resource distribution, social stratification, and a widening wealth gap [13]. Digital literacy includes information retrieval, content evaluation and other capabilities. This is the core variable to understand inequality in the digital age. However, due to the lack of relevant measures, the existing research is difficult to accurately locate groups and obtain more accurate results.

6. Conclusions

According to the research of relevant literature, it is concluded that the digital divide is divided into three progressive connotations: access, capacity and results. The inequality of urban and rural entertainment consumption is not only reflected in the difference of consumption amount. Digital technology also has a two-

way mechanism: on the one hand, by optimizing the matching of supply and demand of entertainment, reducing transaction costs, relying on digital inclusive finance to ease the liquidity constraints of rural residents, release the consumption potential, and then narrow the gap between urban and rural areas. On the other hand, due to the differentiation of cultural capital conversion efficiency caused by the digital literacy gap between urban and rural areas, algorithm recommendations give birth to information cocoon houses, which will increase the level of urban and rural cultural and entertainment consumption, and the rural elderly, left behind children and low-income groups are more conflicted.

Based on this, this paper proposes that the future research can focus on the following aspects. First of all, artificial intelligence is constantly developing and updating. In the future, the researchers can pay attention to the impact of artificial intelligence on entertainment consumption. AIGC can make better progress in the logic and mechanism of digital cultural content, and then expand or narrow the consumption gap between different groups. However, the existing research has not paid enough attention to this, and more far-reaching research and analysis are needed in the future. Secondly, it is suggested to build a general equilibrium framework of digital cultural consumption covering multiple subjects. The current research is limited to the individual level of consumers, and has not developed to the role of social government mechanism in the digital entertainment consumer market. In the future, the platform, government and consumers can be analyzed by building a framework. Moreover, it can enrich the application of objective big data such as digital footprint. The current research has some problems such as extensive measurement dimensions, and if the users leave traces in the user's use process, the researchers can provide more accurate and efficient behavior information. Through these data, the authors can better improve the measurement accuracy of digital cultural consumption research.

Based on the above research findings, the government should propose to change from "digital infrastructure Popularization" to "digital inclusion and literacy improvement". The single expansion of network utilization and equipment access is not enough to deal with the inequality in the field of digital entertainment consumption. Future policies need to pay more attention to

the digital skills training of different groups. Moreover, regulators should strengthen the guidance and supervision of the digital entertainment platform. In today, the use of digital entertainment platform has a wide range of users, and the digital literacy is relatively weak. The platform should strengthen supervision and increase anti addiction measures. Increase the information screening mechanism for minors and the elderly.

Through the construction and improvement of high-quality entertainment platform resources, reduce the cost of rural residents' access to high-quality content, so as to reduce the inequality of urban and rural digital entertainment consumption.

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