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Analysis of the integration of e-commerce and rural lives in China

Guangchun Zheng, Sharifa Sultana, and Kate Williams

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Abstract

Goal. The aim of the study is to investigate on how e-commerce is integrated in Chinese rural farmers' lives and its impact.

Data. The primary data consists of 30 social media posts from four popular social media e-commerce platforms in China: Weibo, Xiaohongshu, TikTok, and Kuaishou.

Analysis. The study used the performance of rurality with computing as theoretical lens to conduct content analysis. The posts were first coded under three themes: infrastructure, situated use, and geography, and then summarized into keywords.

Findings. The study found out that the current state of rural e-commerce in China validates the uniqueness and richness of rurality. The vibrant vitality of rural e-commerce proves that rural areas are not passive recipients of assistance but can be active agents of development.

Contribution. This study contributes to ICT4D research by providing implications for both technological design of e-commerce platforms and rural revitalization.

Introduction

E-commerce has been developing fast in China over the past years, and rural areas account for a good portion of it. A survey in 2012 showed that residents in smaller and more remote cities spent over 20% of their disposable income online, which exceeds the proportion among residents in China's largest cities (Fan et al., 2018). In recent years, more information and communication technologies (ICTs) like live streaming have been integrated with agriculture and facilitate local development.

Scholars believe rural e-commerce is an opportunity to boost social innovation and social welfare (Huang et al., 2020), develop the local economy (Liu et al., 2021), and realize poverty alleviation (Peng et al., 2021). Instead of objects in need of assistance, rural areas are the agencies which can help themselves. This community-driven development model, which is often generated from the bottom up, demonstrates rurality as a unique resource that can provide insights on e-commerce development models in other regions as well as technology design. Therefore, this study seeks to answer the following research questions: 1) How is e-commerce integrated in Chinese rural farmers' lives? 2) What impact has e-commerce use had on rural and urban areas?

Background and literature review

E-commerce and rural e-commerce in China

The development of e-commerce in China began in the late 1990s. At the beginning of the 21st century, Taobao and JD.com, which played pivotal roles in China's e-commerce development, were established successively (Huang & Zhou, 2015). Not all scholars are optimistic about China's emerging market. In his work published in 2008, Martinsons argued that limited by a comparatively traditional business model characterized by 'personal trust, contextual and informal information,' China will face unique challenges. However, Chinese e-commerce has ushered in a period of sustained and stable development since 2010. By 2013, China had become the world's largest e-commerce market (Kwak et al., 2019).

China's rural e-commerce developed along with the overall e-commerce industry. The first online retailer of agricultural products, Yiguo Fresh, was launched in 2005 (Liu & Shen, 2019). Rural access to the Internet provided a foundation for rural e-commerce. China's Eleventh Five-Year Plan (2006-2010) proposed a rural communications development goal in which '*every village has access to the telephone and Internet*' (Central Government Portal, 2011). Rural e-commerce entered its booming stage during the 2010s. In 2022, China's overarching act on agriculture and rural areas proposed '*implementing the "digital business to promote agriculture" project and promoting e-commerce into rural areas*' (China Economic Net, 2022).

Recent literature has described multiple methods to investigate the status quo and impacts of rural e-commerce. E-commerce's role in the increase in the income of rural residents is supported by data from quantitative research (Fan et al., 2018; Peng et al., 2021). Several case studies included local context and further investigated on the role of rural e-commerce in social innovation (Zhang et al., 2022; Cui et al., 2017), poverty alleviation (Huang et al., 2020) and women empowerment (Tang et al., 2022). These studies generally affirm its positive impacts, but Yu and Cui (Yu & Cui, 2019) believed that women's empowerment was not guaranteed by socioeconomic enablement due to traditional constraints on women and digital capitalist exploitation.

Rural computing and ICT4D

In the broader research field of ICT for Development (ICT4D), rural computing is a subfield that receives less attention. Some scholars emphasized the importance of considering technology design from the rural standpoint, because rural areas have special needs (Hardy et al., 2019). When technology is designed with urban users in mind, rural users often encounter mismatches between

their needs and the assumptions embedded in the design, which are based on ‘scripted users’—the intended user profiles envisioned by designers (Hardy & Lindtner, 2017).

ACM Transactions on computer-human interaction published a special issue on rural computing and HCI in 2021. In the introduction of this special issue (Su et al., 2021), rurality is not seen as static, but rather actively shaped, enacted, and experienced through technology, or what is referred to as ‘performed’. The performance of rurality with computing is summarized in three themes: infrastructure, situated use, and geography. This study will analyse the performance of rurality in the case of e-commerce in rural China based on the themes.

Tang and their colleagues’ work is a good example in this field (Tang et al., 2022). It considered both social and technical backgrounds and studied the impact of emerging live streaming technology on women empowerment. The interactivity of social media has brought new challenges and opportunities to e-commerce. This study focuses on the landscape and characteristics of rural e-commerce in China amidst the widespread use of social media platforms. It aims to offer suggestions for the technical design of these platforms and inspire other rural empowerment projects.

Method

This study collected and analysed 30 social media posts from Weibo, Xiaohongshu, TikTok, Kuaishou. These were all popular social media platforms in China with e-commerce technologies embedded. The data collection process included the following steps: 1) Search on the above platforms using the keywords, 助农 (helping farmers), 农村电商 (rural e-commerce), and 三农 (agriculture, rural areas, and farmers). 2) Browse posts published in 2023 and manually determine whether the post is relevant. 3) For selected posts, record the following information: publishing platform, time, format, content, and type of user. Identifiable information was anonymized in the process. The final sample size for this study was ten posts from local users, who lived or worked in rural China; ten posts from outside users; five posts from common media, and five posts from government official accounts. The 30 posts in full can be viewed from the link: <https://docs.google.com/spreadsheets/d/1TBL8PXaYvGZK8I3LZPDPvyfV2e583KZI7RaWzJTTh6w/edit?usp=sharing>.

The data analysis method used in this study was content analysis. Using the performance of rurality with computing as theoretical lens (Su et al., 2021), the content of the posts was first coded under the three themes (infrastructure, situated use, and geography) and then summarized into keywords (e.g. economic conditions, social stigma, etc.). The entire process of data collection and analysis was conducted manually and in Chinese, the language of the original posts. The findings, along with some examples of the corresponding content, were translated into English and are presented in the next section.

Findings

Infrastructure

Technical infrastructure

The technical infrastructure of rural e-commerce is mainly built in three aspects: communication network, e-commerce platform, and logistics and transportation. China has made great progress in developing these three aspects. Many towns and villages have almost achieved 100% 4G/5G signal coverage. Easy access to the internet and the increase in smartphone penetration have given rural residents more opportunities to access e-commerce platforms.

Although transportation costs remain a significant challenge for rural e-commerce, there have been notable achievements in the basic coverage of logistics and transportation services. As of 2022, China ‘has built a total of 990 county-level public distribution centers and 278,000 village-level

express delivery service stations, and 95% of the country's incorporated villages have achieved express delivery service coverage' (post#4).

Economic infrastructure

The agricultural economy is the main economic sector in rural China. Given China's vast territory, different regions are suitable for cultivating different products. The specialties of certain areas have established brand effects like Gannan oranges. However, agricultural production can be significantly influenced by the natural environment, leading to fluctuations in farmers' incomes. 'The total annual income is about ¥10,000 if (tea) is well grown, and ¥7,800 if not.' (post#24).

The traditional sales method for farmers involves selling their products to middlemen, who then distribute to supermarkets or factories through offline channels. Many 'agricultural bloggers' on social media are buyers from other regions. Their role is similar to that of traditional middlemen. The difference is that e-commerce relies more on online channels and enables farmers to not only sell products but also resell to other online stores or directly retail online:

the building behind me is my mango warehouse. It is a supply chain to provide clients with one-click delivery... The customers I have supplied to include stores on Tmall, Pinduoduo, WeChat merchants (e-commerce platforms in China), some supermarkets, and some export businesses. Since the short videos and live streaming are becoming popular, now I'm also selling my own mangoes through these channels (post#14).

Social infrastructure

The aging of the population structure is a common problem faced by rural China. As the younger generation migrates to cities, only the elderly remain in the family to manage agricultural production. They often face physical problems brought about by age and long hours of labour, which make it difficult for them to complete the work.

My 79-year-old grandpa picks (the fruits) by himself every day, and his hand was fractured due to picking. He cannot use any strength in his hands, so the baskets (of fruits) have to be carried down the mountain by my grandma (post#19).

Rural e-commerce also faces the problem of social stigma. One stigma is that rural areas are synonymous with backwardness and poverty. Rural families themselves often regard 'leaving the village' as the life goal. Young people who go out to study and return to the village may suffer from the stigma of 'learning nothing outside' (post#11). There is also social stigma on the e-commerce industry. China values getting rich through hard work. Running e-commerce on social media seems to require little effort and may be classified as an opportunistic way of making money:

(Some people who do e-commerce) lie at home, make videos, pretend to be weird, talk about weird things (to attract others), then put products on the online stores, ship them with just one click, and make money with no effort (post#8).

Situated use

From attention to purchase: logic behind social media e-commerce

The e-commerce model based on social media platforms is very different from the traditional e-commerce model. Users who purchase products on social media platforms are usually attracted by the content on the platform first, and then become interested in the products. This purchasing logic directly affects the producers' marketing strategies. Gaining attention on these platforms is crucial to success. Some rural residents use social media for entertainment and to share their lives. While they may not initially intend to engage in rural e-commerce, under the 'attention-purchase' business model, gaining a large following can easily lead them in that direction:

She saw that other people around her often watched short videos, so she took videos of her daily life. She unexpectedly became popular. Following the suggestions from online comments, she tried e-commerce to sell goods (post#2).

Easier or harder: literacy requirements for social media e-commerce

Social media platforms have relatively lower literacy requirements for the usage and have provided more people with opportunities to participate in e-commerce. Compared with text and pictures, short videos and live streaming lower the threshold for information exchange and sharing. However, there is a gap between recording life and achieving commercial success. Being able to use software is just the most basic skill. How can one craft compelling content to entice clicks and encourage thorough reading? How can one take attractive product photos? These are skills that ordinary farmers typically lack. This, to some extent, explains why many agricultural influencers are university graduates who return to their hometowns to start businesses, as they help bridge the skill gap:

I asked my dad to take some photos as materials for Xiaohongshu posts. He took photos casually. He just took an orange and put it in a bag and take a photo. The photos are not beautiful, but they are indeed the most realistic look of our oranges (post#12).

Geography

Rural empowerment: increase in income, employment, and cohesion

Online platforms help reduce the intermediate resale links of agricultural products, allowing more profits to reach the hands of farmers. Planting regions that have achieved a certain scale can generate more employment opportunities. A young entrepreneur said that he called people from two villages to help with packaging: ‘more than 260 elderly people over the age of 65 have been re-employed in the village, helping to increase their income by more than 100,000 yuan’ (post#5).

The people in the village have a common cause to strive for, work together, and have reaped the rewards; this process has strengthened the cohesion of the community. It can also be a good opportunity for villagers to change their traditional views on the rurality, and they can gain satisfaction and a sense of accomplishment from their contributions to their families and hometowns.

Today plums have started to be packaged and shipped again. The whole village got together, and it was almost more lively than the Chinese New Year. We even set off firecrackers when the first load of goods was shipped out (post#15).

Flow of resources: enhanced communication between urban and rural areas

Rural e-commerce is not a one-way poverty alleviation project. Instead, it is a two-way flow of resources between urban and rural areas. Social media opens a window to showcase rural life, allowing people to see various types of lifestyles. Many urban residents yearn for the idyllic and leisurely pace of life in rural areas, and this window serves as a solace for them. While e-commerce platforms increase income for farmers, they also bring local specialty products to the outside, and even to international markets. This exchange of resources creates a win-win situation. *We don't make profit selling fruits (from the farmers). We just want to ensure that everyone can buy a wide variety of products in our store (post#18).*

Discussion

Consistent with findings in existing literature (Fan et al., 2018; Liu et al., 2021; Peng et al., 2021), this study confirms the positive impact of e-commerce on increasing rural residents' income based on the analysis of rural e-commerce-related posts on four social media platforms. However, whether it can achieve overall empowerment for rural areas, especially in transforming the current social stigmatization, remains a topic for discussion. The study provides some positive evidence, such as

the increased cohesion in rural communities, a shift in the mindset of the younger generation towards rural life and encouraging outcomes in product commercialization and scale expansion by some entrepreneurs. However, attention must be paid to some negative aspects of this issue. The reliance on audience reach for e-commerce on social media platforms has led to many intermediaries creating intentionally sensational and unrealistic videos to gain more attention and sympathy. Such videos not only damage customers' trust in the rural e-commerce industry but also perpetuate stereotypical impressions of rural backwardness.

The findings of this study also shed light on the digital divide existing in rural areas. The existence of the digital divide determines whether rural residents can equally enjoy the benefits brought by e-commerce technology. Drawing from van Dijk's (2005) deconstruction of the digital divide, access to ICT can be viewed as physical access, motivational access, skill access, and usage access. Physical access is no longer the main source of the gap with the vigorous promotion of information infrastructure by the government. From the design perspective of social media platforms, founders utilize short videos and live streaming as mediums to facilitate information exchange, lowering skill requirements and creating a more inclusive technological environment. Furthermore, the combination of entertainment and commerce in social media e-commerce, at a motivational level, encourages rural users to engage with new technologies. Finally, in terms of actual effectiveness, we can observe that groups originally in socially disadvantaged groups have improved their lives through e-commerce technology. For example, two rural residents with disabilities who couldn't work regularly gained the ability to earn money through live streaming sales, increasing their senses of success. All the evidence above shows that the integration of e-commerce with rural lives has the potential to positively impact bridging the digital divide.

Conclusion

By analyzing the experiences and insights shared on social media by rural e-commerce practitioners, both those living in rural areas and elsewhere, combined with external observations from common media and the government, this study presents the fundamental landscape of the integration of e-commerce with rural lives in China. The relatively comprehensive technical infrastructure, an agriculture-centered economic infrastructure, and specific challenges in social infrastructure, collectively shape the distinctive appearance of rural e-commerce in China. Furthermore, the results demonstrate the similarities and differences between the interpretations of technology by platform designers and users, providing inspiration for the design of social media e-commerce platforms. Finally, the vibrant vitality of rural e-commerce proves that rural areas are not passive recipients of assistance but can be active agents of development. Rural areas are not isolated; they maintain a flow of resources with urban areas.

Rural e-commerce is a technology still in development, and future research could explore ways to better utilize it. This study identifies two promising entry points: technology adoption driven by policies aimed at bridging the digital divide and intergenerational support facilitated by young people returning to their hometowns. While the study is rooted in the specific context of rural China, the significance of rural e-commerce for rural revitalization offers valuable insights that could be applied to the development of other regions worldwide.

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About the authors

Guangchun Zheng is a doctoral student in Information Science, University of Illinois at Urbana-Champaign. Her research area is community informatics. Her contact email is gzheng6@illinois.edu

Sharifa Sultana is Assistant Professor in Computer Science, University of Illinois at Urbana-Champaign. She achieved Ph.D. in Information Science at Cornell University. Her research area is human-computer interaction, and human-centered AI. Her contact email is sharifas@illinois.edu

Kate Williams is Associate Professor Emerita in School of Information Science, University of Illinois at Urbana-Champaign. She achieved Ph.D. in Information Science at University of Michigan. Her research focuses on community informatics and public libraries past, present, and future. Her contact email is katewill@illinois.edu

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