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# Platformizing family production: The contradictions of rural digital labor in China

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## Abstract

How is the rise of platform capitalism reinventing the traditional regime of familial production, while at the same time being energized by it? How do the historically informed, lived experiences of rural e-commerce entrepreneurs or workers in China help reconceptualize digital labor and platform studies? Deploying the analytic of platformized family production, this article addresses these questions through a deep description of the experiences of variously positioned platform-based and mediated laborers in an e-commerce village in East China. I argue that the ongoing process of platformizing family production is profoundly contradictory. As an alternative to a model of development based on unevenness and the rural-urban divide, village e-commerce has created opportunities for peasants and marginalized urban youth to achieve social mobility. However, it also shapes a new regime of value that privileges the individualized e-commerce entrepreneur as an ideal subject, and fetishizes and instrumentalizes innovation and creativity in conformity with the global intellectual property regime. These tendencies not only contradict the reality of collective labor organization both on e-commerce platforms and in villages, but also conflict with the indispensable role of manual labor in the production process—reinforcing rather than overcoming existing inequalities and stratification in rural China.

**JEL Codes:** **[AQ-1]**

## Keywords

China, digital labor, e-commerce, family production, gender, inequalities, platform

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Various forms of digital platforms proliferated around the world in the aftermath of the 2008 global financial crisis as a “new business model” to revitalize a sluggish global capitalism (Srnicek, 2016: 4). Platforms are two-sided markets that “bring together users, capture and monetize data . . . [but need] to scale to be effective” (Woodcock and Graham, 2020: 19). Central to the platform’s business model is the mythologization of digital labor as individual micro “entrepreneurs”—each one a self-employed independent contractor who is his or her own boss rather than a worker toiling for the platform (Rosenblat, 2018). For platform companies, this makes both ideological sense—burnishing their brand image of empowering ordinary people by providing a flexible means to make a living—and financial sense—reducing costs by offloading responsibilities to both workers and consumers.

China, in particular, has embraced digital platforms in its effort to restructure an “imbalanced” economy. Awakened to the unsustainability of and risk posed by an economy over-reliant on low value-added, export-driven manufacture during the 2008 crisis, the country has embarked on a major national restructuring with the hope of transitioning into an economy propelled mainly by indigenous innovation, service industries, and domestic consumption. As a manufacturing-based “factory of the world” and a densely populated country with a huge rural population undergoing rapid “urbanization,”<sup>1</sup> “platformization” in China involves not only the rise of consumer-driven and advertising-backed social media platforms like Facebook and platform-based service work exemplified by Uber, but also the restructuring of manufacturing and agricultural industries, the associated regimes of labor, and the lives of workers involved in these industries (Li et al., 2019; Lüthje, 2019).

In particular, rural e-commerce boomed in the past decade or so as a result of the concerted efforts of e-commerce platform companies, different levels of governments, and rural e-commerce entrepreneurs to platformize rural industrial and agricultural production, carrying the hope of breaking an alternative path of rural development to unlock a more humane and sustainable model of development in China. Since around 2008, the rural market has become a crucial new site in the strategic expansion of Chinese tech companies (e.g. Alibaba, JingDong, Pinduoduo, and Kuaishou). Rural e-commerce also occupies a central role in many state policy campaigns, such as “Internet plus,” “mass innovation and entrepreneurship,” “targeted poverty alleviation,” and “rural revitalization” (Li, 2017; Zhang, 2020). Especially, the new hybrid regime of what I call “platformized family production” is celebrated for its potential in re-energizing the rural economy through a synthesis of existing rural manufacturing capacity, family-based organization of labor, and e-commerce’s platform-mediated model of production, sales, and consumption.

A discussion missing from corporate-state endorsed campaigns promoting e-commerce and celebrating rural entrepreneurs, however, is any concern about the conditions of rural digital labor. By digital labor, here I mean both *platform-based labor* (e.g. e-commerce customer service, website design, and online marketing) and *platform-mediated labor* (e.g. e-commerce product manufacturing, packaging, delivery). This article explores the experiences of broadly defined e-commerce workers in the Chinese W Village as a case study of how platform technologies and culture both transform and are reshaped by historically and locally situated regimes of production and labor.

Theoretically, I draw from insights produced by an abundance of published scholarship on digital labor over the past two decades (Gray and Suri, 2019; Hardt, 1999; Hardt and Negri, 2005; Marwick, 2015; Neff, 2012; Rosenblat, 2018; Terranova, 2000; Woodcock and Graham, 2020). They help me conceptualize how capital, through a combination of technological and social innovations in the past several decades, has become increasingly effective in extracting surplus value by offloading risk, training, and reskilling to a labor force that is becoming entrepreneurial. The appeals of entrepreneurial labor are real—flexibility, self-actualization, creativity, and the possibility (though always slim) of transforming oneself into a capitalist. However, ample evidence shows that growing social disparity and precarity have also rendered neoliberal capitalism less livable.

Nevertheless, scholarship of digital and cultural labor, especially pioneering works, are mostly based on the experiences of white middle-class workers in Western metropolitan centers. As Alacovska and Gill contend, it is problematic when knowledge abstracted from experiences in Western creative hubs is turned into “a universalizing and essentializing ‘view from nowhere’” and “elevated to a global and universal mechanism of action” (Alacovska and Gill, 2019: 3). More recent scholarship on platform labor, because of the changing relations between workers and place in platform economy, tend to center on the materiality of platforms and the algorithmically mediated experiences of “placeless” workers. The fact that these experiences are always shaped by their various gender, racial, national, and geographical positionings and histories, are often undertheorized, neglected, or mentioned in passing as individualized variations rather than systematic and structural differences.

Until recently, the majority of the works published on digital labor in China were about manufacturing workers in electronics factories (Hong, 2011; Ngai, 2005; Qiu, 2017). Despite their enormous contribution, the lack of attention to novel forms of digitally based or mediated experiences in China reinforces the dichotomous construction of Western immaterial, affective, and creative labor versus Chinese exploitative manufacturing labor (Casilli, 2017). This started to change in the past few years as a rapidly growing body of research on digital labor and platforms has emerged that makes China and Asia their focus of analysis (Chen, 2018; Lewis, 2018; Lukács, 2020; Lüthje, 2019; Qian, 2020; Steinberg, 2019; Stevens, 2019; Tan et al., 2020; Xia, 2018). However, while some of these works take culturally and socially specific experiences seriously in their theorization of digital labor, others have a propensity to apply, in a rather mechanical way, theoretical claims abstracted from Western scholarship to a more “contextualized” non-Western case.

This article broadens the scope and meaning of digital labor to demystify the much-celebrated figure of the autonomous, individualized e-commerce entrepreneur in rural China by showing the embeddedness of e-commerce work in a network of historically formed gendered labor division in villages and in collective social production online. It departs from platform labor studies’ tendency to theorize from the vantage point of “the accelerating domains of translocal and transnational technological movement of flow” (spaces of flow), to direct attention toward “the geographic spaces and communities of every life” (spaces of place; Castells, 2001: 82). In fact, it is the articulation and tensions between the individualized and intellectual property conforming immaterial labor,

idealized by the spaces of flows of e-commerce platforms, and the collective and hybrid (manual and intellectual) nature of productive and reproductive labor in the village-based places and spaces of platform-mediated e-commerce that shape the experiences of digital work in the Chinese countryside.

Furthermore, it counterbalances digital labor studies' Western-centrism by methodizing (rather than objectifying) China. That is, it acknowledges the West as part of the formation of Chinese subjectivities, which entered into Chinese history "in the form of fragmented pieces," but never in "a totalizing manner" (Chen, 2010: 223). Thus, it treats global capitalism and China as mutually constitutive, depicting the processes by which "residual elements" of Chinese tradition (here, rural family production) are being reconstructed by global digital capitalism, and simultaneously invigorating, reinventing, and constraining capitalism in China (Karl, 2017).

I ask how the rise of global digital capitalism—and specifically platform-based e-commerce—was energized by, and even as it reinvented the traditional regime of familial production. What does this transformation mean for the changing shape of labor in rural China? And what does it mean for village-based e-commerce entrepreneurs and workers variously positioned along the lines of gender, age, and socio-economic backgrounds with different migration and educational experiences? How do the historically informed, lived experiences of rural digital laborers in China help reconceptualize digital labor and platform studies?

Methodologically, the article goes beyond platform-based observation and interviews to draw from data collected during several ethnographic trips to W and several other e-commerce villages. Between 2011 and 2019, I visited W five times (ranging from 1 to 6 months), observing and interviewing industry practitioners of various background and village and county cadres. For comparison, I also paid 1-week visits to three other e-commerce villages located in Shandong, Zhejiang, and Sichuan. I supplement my ethnographic and interview data with archival data on the history of handicraft labor in the area collected from W county library and museum and the Shandong province library, as well as macro political economic data about rural e-commerce in China gathered from CNNIC, Aliresearch's online archive, and news database WiseNews. The co-presence of manufacturing and creative or immaterial labor in W Village allows me to scrutinize not only the blurring and imbricating of the two but also their intensifying tensions and how such tensions are manifested along gender, class, and generational lines. This makes rural China a particular interesting site for deconstructing the universality and novelty of technological entrepreneurialism and its empowering and democratic promises.

The following analysis is divided into two parts. The first part situates the emergence of e-commerce and digital labor in the historical evolution of W Village's handicraft industry. I explain how village-based family production rendered rural e-commerce, in its early years, particularly competitive in the online marketplace, and why rural entrepreneurs considered digital labor an appealing alternative to existing forms of urban and rural employment and self-employment options. In the second part, I depict the costs, tensions, and inequalities inherent in the emerging hybrid labor regime. I focus, in particular, on the intensification of platform-mediated and algorithm-dictated competition among rural entrepreneurs and the often marginalized and devalued handicraft labor of older village women.

I argue that the ongoing process of platformizing family production is profoundly contradictory. As an alternative to the unsustainable model of rural-to-urban migrant labor, village-based platformized production has facilitated the “upgrading” of China’s manufacturing economy to expand domestic market and consumption, while creating opportunities for peasants and marginalized urban youth to achieve social mobility. But instead of challenging the logic of inequalities at the core of capitalism, platformized family production shapes a new regime of value that privileges the individualized e-commerce entrepreneur as its ideal subject and fetishizes and instrumentalizes innovation and creativity in conformity with the global intellectual property regime (IPR). These tendencies not only contradict the reality of collective labor organization both on e-commerce platforms and inside the villages, but also conflict with the indispensable role of manual labor in the production process. Rather than overcoming existing inequalities and stratification in rural China, platformized production reinforces them. The article concludes by calling for a reconsideration of platform capitalism to highlight not only the ruptures but also the continuities of capitalism, and a discussion of the implication of the Chinese case for the global struggle to transcend neoliberalism.

## **When platform capitalism meets family production**

### *From Shanzhai to e-commerce*

Surrounded by marshes and rivers that abound in wild bulrush but are short of arable land, W and its adjacent 32 villages boast of making handicrafts from bulrush for thousands of years. In this small, self-sufficient peasant economy, straw shoes, grass fans, and cushions were woven mainly by village women. The boundaries between innovation and copying, and mental and physical labor were blurred in this family-based, subsistence-driven village collective production system. Weaving skills were passed on from mothers to daughters and new handicraft designs were created collectively by villagers in the natural process of diffusion.

In the early 1970s, this collective system of handicraft-making was appropriated by the commune-based brigade enterprises. During the early reform years, it continued in the form of township and village enterprises (TVEs)<sup>2</sup> where local (village and township) governments became the organizers and coordinators of handicraft production. An industrial chain for exporting handicraft matured under the monopoly of the collective-owned No. 2 Handicraft Factory (No. 2, hereafter). Older women weavers in the village recalled that most of their time during the agricultural slack season was spent weaving products, which they handed over on a weekly basis to village-based collection centers for pick up by the No.2. In the factory, the handicrafts were screened, packaged, and transported directly to the port city of Qingdao. From there, they were shipped overseas to more than 20 countries in Asia, Europe, and the United States. China’s relative autonomy from the capitalist world system and its negotiated and gradual integration after the late 1970s had yet to generate the need for a capitalist IPR system to ensure profit and incentivize innovation. This absence of a copyright regime in cultural production under socialist state patronage reflected the broader national climate at the time (Han, 2010). The incentive for creating new products mainly came from the demand of foreign businesses sourcing products from

the No. 2. By the late 1980s, weaving as a sideline production organized by the TVEs contributed to improving peasant family income and boosting county tax revenue.

Therefore, in the absence of a copyright system, the collective model of handicraft production initially emerged from a small peasant economy based on the village lineage system, which, during the late socialist and TVE years, was re-purposed to serve the planned economy. This collective model became the foundation of the *shanzhai* (or copycat) production regime in the mid-1990s when handicraft production was privatized as part of a national trend following Deng Xiaoping's 1992 Southern Tour to advance China's economic reform.

Building on the handicraft subcontracting system established during the TVE era, private export businesses boomed between 2001 and 2006. Growing overseas and domestic demand for weaving products of all kinds expanded production and diversified designs. New private handicraft factories and retail shops thrived in B County, which kept female weavers busy at home while their husbands had to seek jobs in cities due to the lack of work opportunities in the villages. Privatization and competition also created the issue of "piracy" by criminalizing "copying"; this made village entrepreneurs aware of the need for protecting intellectual property. What for thousands of years had been a benign community-based diffusion of innovation, and a nation-building practice in the socialist and early reform years, became illegal counterfeiting when China became more integrated into the global capitalist division of labor as a manufacturer. Export business owners and villagers told me that, despite growing awareness of intellectual property, it remained common practice for competitors to copy or appropriate each other's designs and sell the same and similar products at a lower price.

The 2008 global economic crisis disrupted this order. Handicraft exports suddenly shrank due to contraction in overseas consumer demand, which rendered family-owned private handicraft export factories and retail businesses less profitable. Dismal urban job markets had driven many migrant workers back home, and some found alternative opportunities in selling handicrafts online. As early as 2002, business owners in W Village had already started to use the Internet to sell their products—listing them on 1688.com, Alibaba's B2B service platform for small and medium-sized companies that traded with domestic and overseas wholesale buyers. When the company's C/B2C site Taobao.com was launched in 2003, some young villagers opened virtual shops targeting domestic retail customers. Business was sporadic in the early days, but began to pick up in 2006 with the rise of platform-based e-commerce. The exponential growth of Chinese Internet users and the growing popularity of online shopping in China opened up a new market for W Village's handicraft industry. As a result, when the export-driven offline economy was in recession in 2008, the online e-commerce economy targeting a rapidly expanding domestic consumer market flourished. The stage was thus set for the boom of platformized family production, aided by young entrepreneurs who returned from the export-driven economy of the cities to their families in W Village.

### *Couple shop versus family shop*

As in many Taobao country villages in 2007, e-commerce hype took off with the return of a few young, entrepreneurial urban migrants who "had seen the world." These migrant

returnees had either worked or gone to college in China's metropolises, and were not only more technically and commercially savvy, but also better attuned to urban consumer taste. Rural e-commerce provided alternative self-employment opportunities in the comfort of home for those who had grown increasingly dissatisfied with life in the "floating population" of the cities. The majority of e-commerce businesses run by migrant returnees or locals in W Village were family-owned, and could be divided into two types: couple shops and family shops. The distinction between work and life remains fuzzy as the logic of the family-based, small peasant economy met e-commerce's flexible regime of accumulation.

Wei and his wife Yun were early on the scene. The couple were born in a hamlet near W Village. Before moving to W to become full-time e-commerce entrepreneurs in 2007, Wei and Yun, both 35 years old, had run a small motorbike-repair workshop in B County while selling village-made handicrafts on the e-commerce platform Taobao.com in their spare time. Wei joined a QQ<sup>3</sup> chat group of small Taobao sellers and spent much of his time there talking to his fellows. One day, he opened a link shared by a group member to a motivational speech by Alibaba's CEO Jack Ma: "The speech was addressed to young people born in the 80s or 90s," Wei recalled,

he told the audience that life is not fair, and don't expect society to be equal. How could someone born in a Chinese peasant family compare himself to Bill Gates's son? He said stop complaining and start your own e-commerce business. E-commerce is the future of the world. Only you could change your own fate.

That weekend, Jack Ma's words kept playing in Wei's head. After some deliberation, Wei made up his mind to become a full-time e-commerce entrepreneur. To save on shipping cost and time, he rented a home/workshop in W Village. Wei compared the early days of e-commerce in W to a "gold rush": "It was really easy back then to sell products on Taobao. You upload a picture and boom, orders started to come in. There were so few sellers compared to the rapidly growing number of buyers." The couple divided the labor between themselves, with Wei mainly responsible for product design, sourcing, photography, and e-shop management and Yun doing customer service, while taking care of household chores and their son. Inspired by Wei's success, many young villagers in W followed his example.

For younger couples with healthy parents, a more typical business structure was the family shop. Kang's family belonged to this type. His parents used to run a wholesale handicraft workshop in W, supplying products to export companies. Kang left the village in his early 20s and studied graphic design in college. After graduation, he worked as a technician for a state-owned oil company in the province. In 2012, 31-year-old Kang returned to W to bring his parents' family business online. His wife, 27-year-old Qing, had served as a jewelry shop assistant in a big shopping mall in B County before getting married and giving birth to their 3-year-old daughter. One of the most successful e-commerce business owners in the village, the family ran two Taobao shops and one Tmall shop.<sup>4</sup>

Kang served as manager of the family business, overseeing the operation of the three online shops. Qing and her 18-year-old younger brother were in charge of online sales.

All of them work from an “office” converted from the couple’s sitting room in a newly constructed house in a courtyard shared with Kang’s grandparents. A portion of the products sold online came from the grandparents’ old cottage weaving workshop. Five on-site women weavers (three were distant relatives) worked in the old family house now occupied by the grandparents. The grandpa, in his 50s, continued his old line of business overseeing the five on-site weavers producing the family business’s specialty products. The grandma was responsible for cooking, house cleaning, and helping Qing with childcare.

### *The entry of the urbanites*

The competitive advantage of rural e-commerce also attracted several young urbanites who felt marginalized in the city. The few urban-to-rural migrants that I met in W were among the most successful entrepreneurs in the village. Zheng came from Jinan, the capital city of Shandong Province. His parents had been workers at a state-owned company. His father recently retired from the company and his mother got laid-off a decade ago. Since then, she had been working nights at the front desk of a small hotel to make extra cash. Having graduated from a local college with an associate degree in computer science, the 30-year-old Zheng had dabbled in several small businesses before getting to know W’s handicraft products from a college friend in 2007. A few months later, despite his parents’ objections, Zheng relocated to the countryside and rented a space on W’s Main Street “My parents were against the idea at the beginning. Born in the countryside, my dad worked so hard decades ago to get a job in a state-owned company in the city so that I could become an urbanite,” Zheng told me,

But I don’t think I have a choice. I tried many different things in the city, only to realize that the chance of improving my living standard is limited without capital or personal connection. My parents are old retired workers who can’t afford to buy me an apartment in Jinan. Without an apartment and a car, I’m worth little in the marriage market. I had to face the reality and pursue a different trajectory if I want to change my fate. Going to the countryside was the right thing at that time.

Like other urban migrants I met in W Village, rural e-commerce presented Zheng with an alternative path toward social mobility.

Once settled in W Village, Zheng’s urban background, prior business experience, and broader social connections gave him an advantage over most rural-born entrepreneurs. His Taobao shop quickly became one of the most profitable in the village. As the scale of his business expanded, he invited his close friend and college dorm mate, Jiang, to be his business partner. Like Zheng, Jiang was born in a working-class family in Jinan. Unable to find a job that would suit his expertise after graduating from college with an associate degree in computer science, he became the personal driver of a municipal government official through a distant relative’s introduction. After a few years, Jiang felt stuck. He could not stand the constant bowing and scraping before his boss, and he hated the frequent long-distance driving. With their humble income, it would take him and his wife at least a decade to save enough to purchase an apartment in Jinan. After the birth of his

son, his anxiety and feelings of hopelessness only intensified. So he quickly jumped at Zheng's offer.

The partners rented office or living space attached to a large warehouse in W from an old couple they called "godparents" (*gandie ganma*). The old man was a very powerful and well-respected person in W Village. A former village head, he used his power to rent several strategically located properties owned by the village collective at very low prices. As the handicraft e-commerce industry boomed, the old couple reaped huge profits sub-leasing these properties. They also opened a handicraft wholesale business. To better integrate into the lineage-based village society, Zheng and Jiang cultivated a cordial quasi-familial relation with the old couple, identifying them as their godparents. They not only rented their property but also sourced some of their products from the couple's wholesale business. The old couple, in turn, took the two young urbanites under their wings, helping them navigate the intricate relationships with villagers and local governments.

Platformized family production was so prevalent that most of W's e-commerce businesses were family-based. A hybrid of e-commerce platforms and long traditions of family-based subcontracting systems, platformization of the familial division of labor took advantage of the countryside's reserve army of surplus labor (such as the elderly, women with small children, and teenagers) and cheap office or warehouse rentals (or free family houses) to establish a competitive advantage for rural entrepreneurs. For village-born entrepreneurs, owning a micro family e-commerce business, run from the comfort of home, also offered a more flexible, autonomous, and profitable (at least in the early days) way to make a living. Even urban "reverse migrants" like Zheng and Jiang had to adapt to this labor regime by forming quasi-familial relationships.

The corporate-state's integration of peasants into an e-commerce regime of accumulation was an invitation to partake in the dual project of nation-building and self-remaking, offering peasants a chance to transcend their fate as perpetual manual laborers, and to become their own bosses in the much-coveted digital economy. Yet, the actual practices and experiences of platform-based and platform-mediated labor in W Village as a social process of production are more complicated and contradictory. Despite the collective effort to increase the added-value of manufactured products through innovation and branding, platform-mediated e-commerce labor, grafted onto the village-based handicraft production network in W Village, has intensified existing tensions in the *shanzhai* regime. As I will show, the platformization of family-based handicraft production perpetuated practices of copying, strained community trust and interpersonal harmony, and rendered gendered manual labor less desirable and unsustainable over the long term. A new regime of value and valuation has come into shape in the process of entrepreneurial reinvention which exacerbates inequalities and stratification in rural China.

## **Tensions from platformizing village-based family production**

### *Algorithm-mediated competition and persistence of Shanzhai*

Like many other platform-based Web 2.0 businesses, Taobao strategically deployed the so-called "free model" in its early days to attract users and consumers. Financed by

venture capital investment, Taobao operated at a sustained net loss from 2003 to 2007. To build market share and raise brand awareness, the platform charged no commission fee for opening shops and listing products—a model that helped it outcompete eBay in 2006. My informants in W recalled the period between 2006 and 2011 as the golden years for Taobao small sellers. Platform-based e-commerce entrepreneurship stood as an alluring alternative to the grim urban job market shattered by the 2008 global crisis, and had drawn many peasants back to the countryside. During those days, it was very easy for peasant entrepreneurs to make money on Taobao “as long as you know how to type, upload photos, and send delivery packages.”<sup>5</sup>

However, the early bird effects gradually faded once Taobao secured dominant market share. After 2008, Taobao had begun to seek various ways to monetize the platform, such as installing a search ranking bidding system and offering an online payment service. A watershed moment came in June 2011 when Taobao’s premium service Tmall.com became independent from Taobao.com. As one of the strategic moves to monetize Taobao before Alibaba’s impending New York stock exchange initial public offerings (NYSE IPO), the company significantly raised Tmall’s entry fee.<sup>6</sup> [AQ: 3] These charges were beyond the means of most rural entrepreneurs in W Village. To make things worse, Alibaba also adjusted its platform algorithm to technically drive user search traffic away from Taobao.com to Tmall shops so as to promote Tmall and increase its profit margin.

The boom-and-bust cycle of dot.com businesses, especially digital platform’s IPO-driven “Growth Before Profit” model, has rendered platform-based e-commerce entrepreneurship increasingly precarious and competitive, and subjected rural entrepreneurs to the vagaries of the new economy (Srnicek, 2016). The government promoted rural e-commerce as part its national campaign of “Mass Innovation and Entrepreneurship” and “Internet Plus,” launched in 2015, which provided political support for rural e-commerce, and drove more people into the industry. Yet, despite Alibaba’s sustained marketing efforts to expand the reach of its Taobao village business model, most of my informants believed that the best days for grassroots rural entrepreneurs had already passed. They identified 2013 as the turning point in B County; after that, the majority of existing Taobao businesses, save a few big sellers, witnessed a decline.

While the platformization of family-based handicraft production and sales carried with it promises to “upgrade” the industry beyond the export-oriented *shanzhai* model, the reality was more complicated. On one hand, instead of competing to manufacture for foreign brands like Walmart and Ikea and producing brandless high-quality products at a low cost, e-commerce entrepreneurs had “moved up” the value chain to design, produce, and sell directly to customers. The proliferation of numerous small online businesses, equipped with a limitless pool of product prototypes, easy accessibility to ranked data on online sales and search results, and constant interactivity with customers through built-in instant messaging apps and customer rating and reviews, had lowered the cost of innovation. On the other hand, the search-ranking-driven nature of online sales and the profit-maximizing algorithmic design of e-commerce platforms like Taobao had also discouraged rural entrepreneurs from investing their labor and time into designing and testing new products and improving the quality of existing products.

One example of how Taobao’s algorithm encourages *shanzhai* concerns how a *baokuan*, or a best-selling product on Taobao, is created. A *baokuan* is born when a

product, along with its many *shanzhai* variations, becomes so popular that it is used almost ubiquitously by consumers across the country and sold by numerous vendors online (and sometimes offline). Because *baokuan* helps drive up online search traffic and sales volume, Alibaba implicitly encourages the creation of *baokuan* products by turning a blind eye to copying practices among listed e-sellers on its platforms. The design of Taobao's complicated and frequently adjusting search ranking algorithm and the availability of profit-maximizing paid marketing plug-ins like *Zhitongche* further disincentivize product innovation. *Zhitongche* is a paid search ranking system that charges shop owners a per-click fee to help them improve their product listing ranking on Taobao (Zhang, 2020). Village entrepreneurs told me that investing money and time into designing and prototyping a new product usually did not generate commensurable reward to the innovators. Instead, it is much more cost efficient to copy or appropriate existing products, especially *baokuan* designs, while redirecting the capital saved into Taobao's paid marketing tools to bump up product search result ranking. "People who invest into producing new designs often suffer," said Li, an art school graduate and urbanite who migrated to W Village to do e-commerce. He explained to me how e-commerce dampened the entrepreneurs' incentive to innovate and sometimes even hurt the quality of products:

People are constantly watching each other's sales figures online. Once they notice a new product that actually sells well, they will ask around, locate the weavers, and ask them to supply the same products. Alternatively, they will show weavers that they trust a picture of the new design and have them produce copies, sometimes with a little modification. For example, they might change the color of a futon's decorative cloth or add a cover to a storage basket. Then when they create a new listing on Taobao, they will label their *shanzhai* product with the same keywords as the original, but sell it at a much lower price. Sometimes the profit margin is so thin that they have to cut corners here and there to outcompete other sellers selling similar products. Why wasting time designing and making new products when your efforts only enrich your competitors' pocket?

As a result, even when they had ideas for new designs, village entrepreneurs were reluctant to pull more capital and resources into research and development (R&D) for fear that imitators will steal their ideas and profits. The prevalence of design copying and appropriation in rural e-commerce reflects the broader tension in platformized social production. The Internet and other networked digital tools have energized both non-proprietary production and the practice of profiting from social production. Consequently, distinctions between creativity and copying, and between individualistic profiteering and community-based collaboration become muddled (Benkler, 2006; Jaszi, 1991; Jenkins, 2018).

The village-based family production network further intensified the tensions of platformized social production. As I have shown, e-commerce in W Village was built on the collective and open production network of village-based family handicraft-making. That is, any e-commerce entrepreneur can choose to source a particular product from any weaver, although relationships between e-commerce sellers and weavers were sometimes mediated by-product collectors. In Li's account, this collective and open structure of production made it easier to steal and copy others' new designs. Absent a

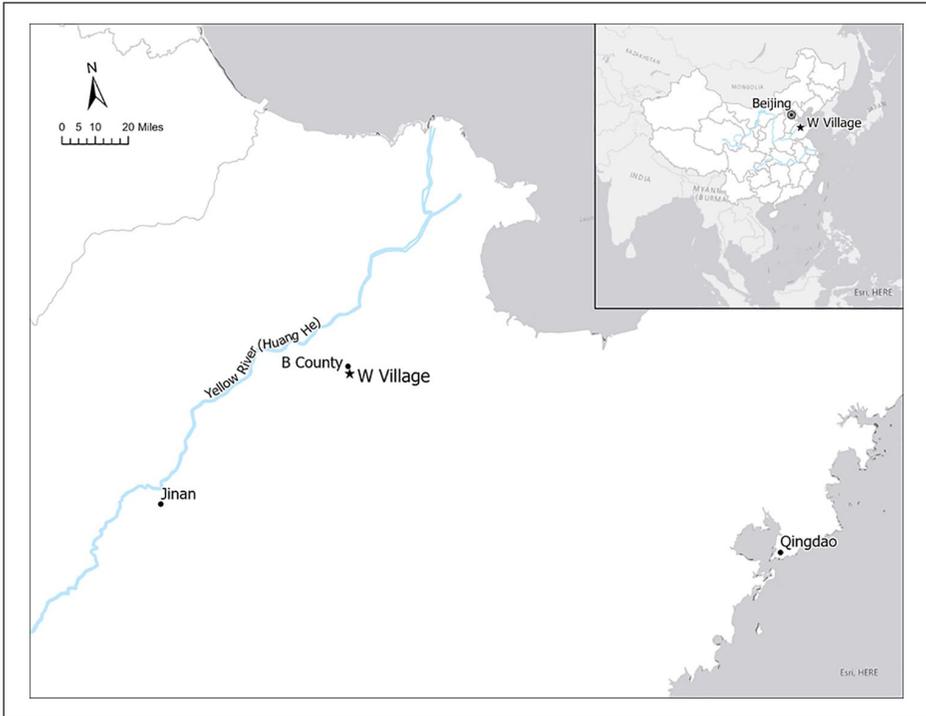


Figure 1. [AQ: 2] Map of W Village.

legally binding contractual relationship typical of formal business enterprises, village production networks overlap with the informal lineage system of an agricultural society, as Pei explained to me,

I can't keep my design away from my cousin, and he had to tell his wife about it. Then his wife's sister knows it too . . . and in no time, you see my design listed in every village shop's front page. (Fei et al., 1992)

Tension generated by the platformization of *shanzhai* production was so thorny that it triggered a heated discussion at the 2013 Inaugural Taobao Village Summit in Zhejiang. In an open discussion that I participated in about “upgrading rural e-commerce,” “Taobao Village” representatives from across the country offered impassioned stories of vicious competition in their villages, echoing my observation in W.

Platform-based market competition among sellers works to keep product unit prices low. Although e-commerce platforms benefit by pitting sellers against each other to offer high-quality products at lower prices to e-commerce consumers, cut-throat competition, as we will see, resulted in devaluing handicraft labor, which threatens the long-term sustainability of rural e-commerce in China.

### *Marginalizing the gendered labor of handicraft production*

E-commerce was championed by the state-corporate nexus as a positive agent in reinvigorating traditional handicraft-making. In W Village, however, the rise of e-commerce—coupled by the availability of more desirable alternative labor opportunities for younger women, inter-generational power shifts, and the rise of intra-village economic inequalities—has contributed to the devaluation of handicraft labor and the relative socio-economic decline in the standing of women weavers. In turn, this depreciation of gendered handicraft labor has deepened class and generational inequalities among women in the area. In comparison to the expanding army of e-commerce entrepreneurs and the celebration of Internet-based entrepreneurship, the number of handicraft makers has dwindled in the past decade. At stake here are changing perceptions of what constitutes “good work” for women. The valorization of digital entrepreneurship and urban service sector labor has diminished the value of home-based weaving not only financially, but culturally as well (McRobbie, 2016: 8). Whereas it is easier for better-educated young women to reinvent themselves as Internet entrepreneurs or service workers, older women are often left behind because of age, family responsibilities, and lack of education. The shrinking and aging labor force of women weavers has already slowed production and compromised the quality of the handicrafts produced.

During my first trip to B County in 2013, the majority of weavers were women in their late 40s or above. However, upon my last visit in the summer of 2019, the average age of active women weavers had increased to the mid-50s. Many of the women weavers had never worked outside their villages, and quite a few were illiterate. A small number of women in their 40s chose to stay at home and weave, mainly because of child- and elder-care responsibilities. Most 40-something women worked in the service sectors or in factories in B or nearby counties within commuting distance. Few village women in their 30s or younger were willing to join the home-based weaving force. Most young women that I talked to showed contempt for weaving labor. Born after the “One-Child Policy” initiated in 1980, those younger women were either an only child or one of two family siblings.<sup>7</sup> Growing up materially better off, they had generally received more education than their mothers (junior middle school or above), and were exposed to an urban middle-class lifestyle at a young age through TV and other media channels. Many received middle-school education outside their villages in B County. A few had gone to college or migrated to the city to work before returning home. Few of these women were willing to replicate their mothers’ or grandmothers’ perpetual home-based manual labor. They would only consider home-based weaving work as a last resort when other employment or self-employment options were unattainable.

My conversations with Hua, the owner of a handicraft export business and a weaver in her late 40s, informed me of the challenges that older women faced in keeping up with the new economy and rapidly changing labor regime. Hua started out as home-based weaver when she had to quit middle school at 15 years after her father passed away. By the mid-2000s, through her hard work and business savvy, she had become one of the few successful female handicraft export entrepreneurs in W Village. But her business took a nosedive in 2008 because of the sudden contraction in the export market. Although

export demand gradually recovered in subsequent years, the rise of e-commerce posed a bigger threat.

In the early days of rural e-commerce, when it was still relatively easy to make quick money on Taobao without much technical expertise, several weavers at Hua's workshop—all women in their early to mid-40s—left to open their own e-commerce shops. Hua was quite sympathetic to these weavers' decision: "I don't blame them. Weaving is hard work. No one wants to get stuck as a manual worker forever." Remunerated at a piece rate, an adroit weaver in her 40s or early 50s had to work from dusk to dawn for 7 days a week to earn what a supermarket cashier could earn (about 2500 yuan or US\$375). Older weavers working at a slower pace on less sophisticated products earned even less. As the number of women weavers dwindled in recent years, handicraft piece rates slowly picked up, but they could not catch up with the newly emerging alternative employment and self-employment opportunities in the area. Afraid of being left behind, Hua joined the e-commerce gold rush and set up a Taobao shop with the help of her teenage son:

My e-commerce shop attracted very little traffic. I just can't keep up with the rapid development on the platform. There was a new digital tool or a new rule that you had to learn every day. I don't even type fast enough to keep the few customers happy

Hua recalled her attempt at entrepreneurial reinvention through e-commerce:

Based on my observation, most of those who succeeded were either tech-savvy college graduates, or rich business men who had hired a team of e-commerce professionals. If you are an old folk working alone like me, don't waste your time.

By the mid-2010s, as the rural e-commerce hype sweeping China drew many new customers into handicraft e-commerce, it was increasingly challenging to collect products to meet export companies' demands in a timely fashion. By then, e-commerce had become highly competitive and professionalized. None of the women weavers who had left Hua's workshop for e-commerce a few years earlier made enough profit to support their families. Nevertheless, only two of them reluctantly returned to work at Hua's workshop. The rest sought service industry jobs in B County in positions like supermarket cashiers and restaurant servers.

For the younger women that I talked to, urban service industry jobs and e-commerce offered opportunities of human interaction (either face to face or mediated) denied to home-based weavers. Both granted more physical mobility; the former required daily commuting to the city, while the latter allowed women to work anywhere, especially after the popularization of smart phones. Village women in urban service industry jobs were able to work in clean air-conditioned malls, supermarkets, or restaurants. Those involved in e-commerce, either as business owners or customer service assistants, had a different home-based work experience from women weavers. The women e-commerce workers' homes that I visited were usually well kept and decorated. I noticed that it was customary for them to regularly catch deals online, mostly for clothes, cosmetics, and home decorations—this practice was considered a perk of working in the e-commerce industry. In contrast, home-based women weavers were confined to the domestic sphere

with little opportunity to expand their social circle or leisure time to enjoy life. It was difficult for them to keep their homes and backyards clean and tidy because they had to process bulrush or other weaving materials there. To make more money, some women took up handicraft painting, which meant working with toxic painting materials and tools that were always messy.

In addition to these financial and cultural reasons, weaving was monotonous and physically strenuous. Sitting on a stool, women weavers had to repeat the same hand motions again and again. With the e-commerce industry's growing demand for products and the decreasing number of weavers, existing women weavers had to constantly work under time constraints. To speed up production, most weavers usually specialized in producing a few types of standardized handicrafts. If anything, professional women weavers worked more like human weaving machines than the romanticized image of rural craftswomen entrepreneurs constructed in their online branding stories. All of the women weavers that I met suffered from chronic back pain and arthritis resulting from a lifetime of weaving.

The varied experiences of village-born women present a sobering picture of rural digital labor and e-commerce, reminding us of the backbreaking physical labor that sustains e-commerce, but is often rendered invisible by its valorization. The opportunities offered by e-commerce are also unevenly distributed along the lines of gender, generation, education, and migration experience. Echoing McRobbie's (2016) observation of young British women with a working-class background, young women in W Village escape from weaving labor not only for financial reason but also because culturally "normative femininity comes to be attached to the need to dis-identify with traditional female working-class values and lifestyle" (p. 90). Thus, e-commerce becomes a new site where gendered service labor and consumption proliferates, which divides rural women and perpetuates intra-gender inequalities along generational and class lines. The impending shortage of women weavers in W forces us to confront not just the moral but also the economic consequences of new forms of inequalities brought about by the digitalization of the rural economy.

## Discussion and conclusion

In observing the shifting labor regime and subjectivities in Western industrialized society, the Italian Autonomist Maurizio Lazzarato (2013) conceptualized the new ideal worker as an "author" and emphasized the "radical autonomy of [industry's] productive synergies," which, as he explained, "results from a synthesis of different types of know-how: intellectual skills, manual skills, and entrepreneurial skills". This article contests the universality of this image of the digital laborer as a market-based autonomous author-entrepreneur. Departing from existing digital labor literature's tendency to universalize Euro-American platform-based immaterial labor practices, I centralize the temporal-spatial specificity of digital labor while broadening its scope to include platform-mediated manufacturing work.

I present the theoretical construct of platformized family production to examine how the global expansion of platform capitalism coheres with the temporal-spatial specific, lived experiences of labor. Through a deep description of the Chinese handicraft

e-commerce village W, I depict the articulation of the virtual spaces of e-commerce network flow and the physical spaces of community-based production, which has generated both opportunities and tensions for platform-based and mediated entrepreneurs and workers. In doing so, I have emphasized the historical continuities and ruptures of platformized labor practices in China within the existing system of global subcontracting and the family-based gendered division of labor. I have also revealed the culturally specific ways in which variously situated workers experience contradictions of the hybrid regime of platformized family production.

As I depicted, the narrative of “digital empowerment” was a familiar trope whenever my informants recalled their early encounters with e-commerce. In the golden days of rural e-commerce, Alibaba’s Taobao platform had indeed lowered the e-commerce startup threshold, providing opportunities for some young rural workers and marginalized urban people to achieve upward social mobility. Home-based small businesses also offered more freedom, choice, and comfort compared to the types of urban employment that were available to these entrepreneurs.

However, as a site where different labor practice regimes and subjectivities coexist and compete in one geographical space and temporality, the story of W Village complicates both the optimistic discourse about rural e-commerce championed by the state-corporate nexus and the existing literature of platform-based digital labor. It demonstrates, not the disappearance of boundaries between manual and intellectual labor, copying and innovation, and individualized entrepreneurship and networked collective production, but rather the intensification of their contradictions within platform capitalism. The struggles of rural digital labor in negotiating within these contradictions reveal the personal and collective challenges and failures in entrepreneurial reinvention. Their experiences lay bare the unevenness of global platform capitalism and the limitations of platformization in confronting structural inequalities at the core of contemporary Chinese society.

Despite the distinctness of platformized family production, China is not alone in its reliance on the family as a provider of welfare and an agent in socio-economic and political reproduction. Similar patterns can be found in other industrialized and industrializing nations in Asia, southern Europe, and Latin America (Berger, 1988; Papadopoulos and Roumpakis, 2013). According to sociologists Theodoros Papadopoulos and Antonio Roumpakis, the continued prominence of family-based labor in these regions should not be seen as symptoms of domestic “rudimentary development” but rather as “outcomes of the ways in which these national political economies were integrated into regional and global economies as (semi-)peripheries” (Papadopoulos and Roumpakis, 2013: 206).

The years following the 2008 global financial crisis represented a watershed moment not only for China, but for the entire neoliberal world order, one marked by the rise of entrepreneurialism and the concurrent resurgence, in many national economies, of state power and the “familization” of social risks in the face of proliferating insecurity, instability, and precarity. Decades of financialized global capitalism have wreaked havoc on national economies around the world, and the resulting mix of weak labor protections, high inequality, and debt-financed economic bubbles created the conditions for entrepreneurialism’s rise. In this sense, rural China’s post-2008 entrepreneurial reinvention, though built on the country’s small peasant tradition and a continuation of its distinct developmental trajectory over the previous decades, is a spatially specific manifestation

of a global shift, in which national economies, to overcome global risks and economic instability, have re-embedded themselves into state and family institutions. I hope this grounded account of China's experiences would offer insight into the benefits and pitfalls of entrepreneurialized solutions to global crises, and thus propelling us to rethink and seek potential alternatives to the current paradigm.

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### Notes

1. In 2008, roughly 53% of the Chinese population was rural: by 2018, the rural percentage had decreased to 40%. For more information, see <https://www.statista.com/statistics/278566/urban-and-rural-population-of-china/> (accessed 10 March 2021).
2. Township and village enterprises (TVEs) are market-oriented public enterprises under the purview of local governments. These enterprises emerged in the late 1970s and 1980s following China's economic reform. Many were established on the legacy of commune and brigade enterprises founded during the Great Leap Forward and the later years of the Cultural Revolution.
3. QQ is a Chinese instant messaging tool developed by Tencent.
4. Tmall.com is an upscale version of Taobao.com introduced by Alibaba in 2010 to differentiate merchants who are either brand owners or authorized distributors from Taobao's customer-to-customer merchants.
5. Personal interview, 2015.
6. Tmall charges a fixed sum deposit that runs from 50,000 to 150,000 yuan, a service fee of 30,000–60,000 yuan, plus a commission fee in proportion to the shop's yearly sales volume.
7. The "One-Child Policy" was a population control policy introduced by the Chinese government in 1979 and was in effect until 2015. The policy allowed rural families to have a second child if their first born was a girl.

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