

Chapter 4

The Sharing Economy Platforms in Rural China: Bridging Institutional Voids Through Institutional Entrepreneurship



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Abstract In this chapter, we explore how sharing economy platforms bridge institutional voids and engage in the divergent change to address poverty in the BoP communities. Based on an extensive review of the sharing economy literature, we identify two sharing economy models in China that differ in the degree of sharing economy activities. We label these platforms as the following: (a) the social-commerce-driven platform and (b) the access-driven platform. We then compare and contrast these platforms through two case studies: Pinduoduo's group buying and selling model and NSB's access to agriculture machinery model. Initial insights from the cases suggest that these platforms diverge from existing firms by utilising the online-offline social networks in the communities. Additionally, the social-commerce platform can help the rural farmers in building assets and capabilities needed for long-term growth and prosperity. However, this type of platforms can develop monopolistic tendencies and has a risk of mission drift. The access-based platform can facilitate access to necessary goods and services for BoP communities; however, they might be limited in building assets and capabilities of the rural communities without an explicit focus. We discuss the implications of these findings for the theory and practice.

Keywords Sharing economy · China · Institutional voids · Social cohesion · Social capital · Technoficing · Digital social innovation · Base of the pyramid

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4.1 Introduction

Poverty alleviation is at the core of global development policy (Bhatt, 2021, forthcoming; Qureshi et al., 2018a). The sustainable development goals aim to ‘end poverty in all its form everywhere’ (SDG, 2020). However, despite massive investment to reduce poverty through various policy initiatives (growth, foreign aid, government welfare policies and philanthropy), the persistence of poverty as a grand challenge remains puzzling (Qureshi et al., 2018a). Management scholars have conceptualised global poverty through the framework of the base of the pyramid (BoP) (Kistruck et al., 2013; Parthiban et al., 2021). The BoP is a categorisation of the world population in an economic pyramid based on a person’s daily income (Prahalad & Hart, 2002). While the top of the economy pyramid consists of the most affluent social-economic group, the base of the pyramid constitutes low-income socio-economic group living on less than two dollars a day and are estimated to be between two billion (Karnani, 2007) to four billion people (Prahalad & Hart, 2002).

The BoP proposition highlights the role of socially innovative, entrepreneurial models as a long-term solution to poverty (Kistruck et al., 2013). It is argued that entrepreneurial activities at the BoP could result in mutual value creation by providing the poor access to products and services (Shalini et al., 2021) and by integrating them to the formal market (Bhatt, 2021, forthcoming; Mair et al., 2012; Qureshi et al., 2018a). In this context, we consider the scope and potential of the sharing economy business models at the BoP.

The sharing economy, also known as the demand economy or the platform economy, is commonly defined as a peer-to-peer-based sharing of access to goods and services facilitated by online platforms (Botsman & Rogers, 2010). The sharing economy prioritises the sharing of underutilised assets; thus, it is often associated with improved efficiency, environmental sustainability and enhanced community networks (Frenken & Schor, 2017). While there is an increase in research to understand the differences between sharing economy and the traditional business models, prior research has mainly focused on the role of sharing economy businesses in improving economic efficiency (Sundararajan, 2016) and reducing carbon footprints (Frenken & Schor, 2017). The potential of sharing economy in addressing poverty and achieving sustainable development goals, specifically at the BoP remains underexplored.

Scholars working in the BoP context focus on exploring the role of institutional context to understand the root causes of poverty (Bhatt et al., 2019; Qureshi et al., 2018a). Institutions are formal and informal rules and norms of behaviour that shape human interactions (North, 1991). Well-functioning institutions are linked to higher economic growth, innovation and an increase in firm performance (North, 1991; Khanna & Palepu, 2006). However, BoP contexts are often marred with institutional voids (Parthiban et al., 2020; Hota et al., 2019), which either results from the lack of formal institutions (Kistruck et al., 2013) or from the conflicts and contradictions between existing institutions (Mair et al., 2012). As such, the extant literature suggests the need for institutional entrepreneurship to address the complementary

institutional voids when designing long-term solutions for poverty (Parthiban et al., 2020).

Institutional entrepreneurship refers to the process of creating alternate forms of institutional arrangements that diverge from the norms, values and practices associated with the existing institutions (Battilana et al., 2009). According to Battilana and her colleagues (2009), institutional entrepreneurs are actors who initiate divergent change and actively participate in implementing these changes. To understand the potential of sharing economy business models, we explore how *sharing economy business models bridge institutional voids and engage in the divergent change to address poverty at the BoP communities*. We explore this research question in the context of the sharing economy in China. We first discuss the definition and scope of sharing economy in China and identify two dominant interpretations of sharing economy platforms: the social-commerce-driven platform and the access-driven platform. We then compare and contrast the characteristics and functionality of these platforms through two case studies: Pinduoduo's group buying and selling model and NSB's access to agriculture machinery model.

This research shows that the two narratives of the sharing economy platforms differ in the degree of sharing activities. While the social-commerce-driven platform facilitates sharing of logistics, the access-driven platform allows sharing of goods and services. Our findings show that both types of sharing economy platforms use social ties (i.e. Guanxi) while engaging in the process of institutional entrepreneurship (Qureshi et al., 2016). For BoP communities, our findings imply that the social-commerce-driven platform model can use institutional entrepreneurship to help rural farmers build assets and capabilities required for their long-term growth and prosperity (cf Escobedo et al., 2021). However, this type of platform can develop monopolistic tendencies and has a risk of mission drift (Logue & Grimes, 2019; Qureshi et al., 2018a). The access-based platform can facilitate access to necessary goods and services for BoP communities; however, without an explicit focus, they might be limited in building assets and capabilities of the rural communities. We discuss the implications of these findings for the theory and practice of the sharing economy research.

4.2 Sharing Economy Concept and Definition

The sharing economy refers to a class of economic arrangements in *which asset owners and users mutualise access to products or services associated with these assets* (Lamberton & Rose, 2012; Sundararajan, 2016).

In recent years, the sharing economy has gained wide popularity in research and practice (Cheng, 2016; Frenken & Schor, 2017). The interest in sharing economy business is growing because it creates new potential sources of revenue and profits for firms and investors (Eckhardt et al., 2019). For example, sharing economy companies represent a new way to think about assets utilisation (Bardhi & Eckhardt, 2012). Contrary to traditional firms, the sharing economy companies do not own

assets; instead, these companies facilitate access to resources by ‘matching’ individuals who ‘have’ resources with those who ‘want’ the resources (Böcker & Meelen, 2017; Gutiérrez et al., 2017). As such, the sharing economy creates market opportunities by attracting new customers who either could not afford to own a product or do not have sufficient need to do so (Belk, 2014). Given the potential of growth, it is not surprising the venture capitalists have been pouring lots of money into the market since 2010 (Gregory & Halff, 2017). Policymakers have also been navigating the field of sharing economy, and as a result, the definitions and scope of sharing economy differ significantly across the countries (Dong, 2016).

4.2.1 *Sharing Economy in China: Two Interpretations*

While many countries across the globe such as South Korea, Netherland, Italy and Australia have embraced the concept of sharing economy, China is the first country to declare sharing economy as its national priority.¹ In the Thirteenth Five-Year Plan (2016–2020), the government has recognised the sharing economy as a promising aspect of the new digital, service-based economy. As a result, the Chinese sharing economy sector grew exponentially. In 2015, the sector was reportedly worth \$229 billion. According to government figures, in 2016, the sector accounted for more than \$500 billion in transactions involving roughly 600 million people. According to the government prediction, by 2020, the sharing economy will account for 10% of the national gross domestic product (GDP) and 20% by 2025.² However, as noted by April Rinne, an independent advisor to China’s National Committee on the Sharing Economy, to understand the sharing economy in China, it is important to identify the different interpretations and definitions of sharing economy that are prevalent in the Chinese context.³

4.2.1.1 **Definition of Sharing Economy in China**

To understand the sharing economy models emerging in China, we conducted an in-depth literature review to identify definitions, characteristics and interpretations of Chinese sharing economy. Based on our review of the literature, we identified

¹Larmer, B. (2017). *China’s Revealing Spin on the ‘Sharing Economy’*. New York Times Magazine. Retrieved from <https://www.nytimes.com/2017/11/20/magazine/chinas-revealing-spin-on-the-sharing-economy.html> (accessed 24 July 2021).

²Zhong, N. & Zheng, Y. (2017). *Report Says China’s Sharing Economy to Grow 40% Annually*. The State Council The People’s Republic of China. Retrieved from http://english.www.gov.cn/state_council/ministries/2017/03/23/content_281475604274591.htm (accessed 29 June 2020).

³Rinne, A. (2017). *China’s Sharing Economy: What Is Going On?* Medium. Retrieved from: <https://medium.com/@aprilrinne/chinas-sharing-economy-what-is-going-on-cc9f7536b502> (accessed 29 June 2020).

two dominant narratives of sharing economy in China. We labelled these narratives as (a) the socio-commerce-driven platform and (b) the access-driven platform.

(a) The Socio-Commerce-Driven Sharing Economy Platform

Sharing economy is broadly defined as a digital ecosystem revolving around short-term renting of resources (Bhatt et al., 2021). In this conceptualisation of sharing economy, accessing goods and services through the digital economy becomes the most important feature of sharing economy (Qureshi et al., 2021a, b). This definition is broad and includes every activity that provides access to a product or service activated by a smartphone (cf Hamari et al., 2016; Qureshi et al., 2018b). Various government institutes on sharing economy in China believe that a broad conceptualisation of the sharing economy is necessary to understand the emerging scope of sharing economy activities.

For example, according to the National Development and Reform Commission in China (2017), any attempt to define the sharing economy should take into account the emerging nature of the phenomena. The sharing economy business models, their modes of operation, business forms and applications are continuously in flux, and a variety of innovation and entrepreneurship practices continue to emerge (Qureshi et al., 2021c; Qureshi & Fang, 2011). Therefore, the commission suggests that if the definition is too narrow or too broad, it may not be conducive to the development of sharing economy. Accordingly, the commission defines the sharing economy as:

A new economic form that uses network information technology to optimise the allocation of scattered resources and improve utilisation efficiency through the Internet platform (NDRC, 2019a).

The State Information Center (2019) views Information technology such as the Internet as the foundation of sharing economy and *defines sharing economy as the sum of economic activities which are characterised by the sharing of right to use*. The centre suggests the advancement in the information technology has the ability to integrate scattered resources, accurately find diversified needs, and quickly match the supply and demand sides.

Based on these discussions, the key characteristics of the sharing economy are:

- (a) Digitally enabled platform: The sharing economy is driven by the advancement of digital technologies (NDRC, 2019b). Specifically, the emergences of innovative models in social media (such as WeChat, QQ in China) are redefining the scope of sharing economy. Many sharing economy implementations follow the principle of technoficing to use simple and inexpensive digital technologies that provide access to resources that community members need (Qureshi et al., 2021c).
- (b) Matching supply and demand: Through the use of information technology, the sharing economy platform accurately and efficiently matches the supply and demand sides in the massive, scattered resource information and demand information (NDRC, 2019b)
- (c) Merging the providers and customers: In the sharing economy, any enterprise or individual can become a consumer or a provider. People and organisations not

only obtain services or goods in sharing economy, but also share the underused goods, time and skills. Thus, the boundaries between producers and consumers start to blur, and presumption becomes a new trend (NDRC, 2019b).

Taobao sharing ecosystem (Wu et al., 2020) and community group buying facilitated and incentivised through social media platforms are seen as an example of sharing economy business model. Instead of facilitating access to underutilised resources, sharing economy platforms in these conceptualisations are used for reducing the logistic cost associated with each transaction.

(b) **The access-driven sharing economy platforms**

The access-driven economy emphasises the separation of ownership and users' right (NDRC, 2019b). While the access-driven sharing economy shares all the characteristics of the socio-commerce perspective of sharing economy, it is limited in its scope due to prioritising access to underutilised resources over ownership (Benjaafar et al., 2019).

This stream of research has focused on the motivation of the participants in sharing economy activities and has studied the local models that are equivalent to Uber and Airbnb. For example, a review of recent work on the Chinese sharing economy shows that the rapid development of the sharing economy aims to meet the actual needs of the people (Liu et al., 2020). Most of this research focuses on the transportation sector and shows people's commuting demands have changed greatly with the development of car sharing in China (China Internet Network Information Center, 2015; Zhou & Liu, 2016).

While urbanisation has intensified the demand of citizens for urban transportation, these demands are not satisfied by traditional transportation sectors, such as car rental companies, taxis and public transportations. To meet these demands, many local online ride-hailing services such as Didi and Shenzhou have emerged. Recent studies shows the entry of Internet giants in the sharing economy sector such as food sharing, car sharing, bike sharing, and power bank sharing (Parente et al., 2018).

Even though these two narratives of sharing economy are distinct in terms of their scope, they are similar in terms of their growth orientation and growth strategies. As common to the growth of the sharing economy platforms in other countries, the winner-take-all nature of the platform enterprises in China have led the Internet giants to invest a large amount of funds to subsidise their service so as to improve its popularity and market share (Zhu, 2017). In order to increase income, more and more people are joining the platform and investing in new assets (e.g. buying a new car or a new apartment) to expand their services (Li, 2015).

The exponential growth of the market size, the sharing of private goods, the complex pricing mechanism and the operation mode of the platforms make the governance of sharing economy extremely difficult (Vith et al., 2019). Although the Chinese government has set the development of the sharing economy as a national strategy, the government has to pay attention to the potential risks brought about by the rapid development of sharing economy and set regulations and restrictions on

the sharing economy (Zhou & Liu, 2016). Furthermore, poverty reduction is a key policy objective of China's government, and there is a policy interest in exploring how the sharing economy can be used to support the population living in poverty. In the next section, we discuss the BoP literature in China and connect it with the institutional void literature.

4.3 Sharing Economy and BoP: Institutional Voids

When evaluating the potential of sharing economy business models in orchestrating change, it is important for us to consider the intuitional environment at the BoP in which these entrepreneurial activities are embedded (Bhatt et al., 2019). The BoP framework categorises the world population in a pyramid based on income indicators such as annual purchasing power parity or daily income threshold. The base of this pyramid refers to the poorest population living on per capita income at or below US\$1500 or US\$2000 per annum or in less than two dollars a day (Prahalad & Hart, 2002). Other definitions make references to 'the bottom billion' or even 'the bottom four billion' of the global population who primarily lives and transacts within the informal economy (London et al., 2014). Geographically speaking, BoP contexts have been equated with rurality and covers about 80% of the rural population (Bhatt, 2017; Qureshi et al., 2018a; Hota et al., 2019).

While the literature has conceptualised BoP through multiple ways and has received criticism for this (Karnani, 2007), a defining characteristic of these contexts is severe resource constraints (Hota et al., 2019) and institutional complexity (Mair et al., 2012). Institutions are formal (e.g. constitutions, laws, property rights and governmental regulations) and informal (e.g. customs, traditions, religions and beliefs) systems of rules that structure social interactions (North, 1991). Institutional theorists have linked 'modern' or western-style formal institutions to many economic benefits. For example, well-developed legal systems and property right regimes are seen useful in reducing transaction cost, improving efficiency and promoting innovation and higher economic growth (Kistruck et al., 2015; London et al., 2014).

In the BoP context, the institutional complexity resulting from the interlocks of formal and informal institutions affects the strategies and behaviours of the actors (e.g. firm, entrepreneurs) (Parthiban et al., 2020). As such, the BoP contexts are deemed to have 'institutional voids' which has been interpreted two ways in the literature:

- (a) In the first perspective, formal institutions to support market activities are either absent or poorly developed (Qureshi et al., 2016). For example, Khanna and Palepu (2006: 62) describe institutional voids as 'the absence of specialist intermediaries, regulatory systems, and contract enforcing mechanisms'. In the BoP context, institutional voids hinder entrepreneurial activities by increasing the transaction cost of conducting business (Parthiban et al., 2020; Kistruck et al.,

2013; Khanna & Palepu, 2006). The proposed solutions to decrease transaction cost involve the presence of large business groups that can complement the missing institutions and provide necessary (financial, labour, information) resource for facilitating economic growth (Mair et al., 2012). In recent years, cross-sector alliances between commercial companies and local organisation are also suggested to reduce the uncertainties caused by poorly developed institutions (Kistruck et al., 2013).

- (b) The second perspective defines institutional voids as ‘analytical spaces at the interface of several institutional spheres, each with its own animating logic of meanings and social practices’ (Mair et al., 2012: 822, cf. Riaz & Qureshi, 2017). Instead of understanding institutional voids as ‘empty’ of specific institutions, this perspective shows that voids occur amidst institutional plurality and is the intermediate outcome of conflict and contradiction among informal institutional spheres such as local political, community and religious sphere (Qureshi et al., 2018a; Mair et al., 2012).

As such, this perspective suggests understanding local institutional context and prioritising solutions that are based on local experimentation and recombination (Hota et al., 2021; Pandey et al., 2021; Qureshi et al., 2018a). In the next section, we apply this theoretical understanding to sharing economy in China.

4.3.1 China: Rural Poverty and Institutional Voids

The persistence of poverty in rural areas in China has been linked to institutional voids (Wu et al., 2020; Qureshi et al., 2016). However, these institutional voids are not seen as a result of institutional plurality and conflicts; instead, scholars ascribe institutional voids in rural China to market inconformity (Wu et al., 2020). For example, Wu et al. (2020) argue that the urban-rural gap in China is an example of institutional void, which shows the geographic and temporal differences in market development across regions and times.

While the rural sector still relies on the agriculture sector for subsistence, it suffers from many inefficiencies and uncertainties (Wen, 2009). These inefficiencies are a result of various institutional practices. For example, the household registration system (Hukou system) separates China’s labour force into two sectors: the rural sector and the urban sector (Li et al., 2017; Guan et al., 2018). Hukou has two important characteristics: first, it is based on location of birth/residency and second, it is linked to the sector of the economy (i.e. urban or rural) (Li et al., 2017). During the planned system (1950–1980), a person was restricted to only live and work in the location and the sector that their Hukou indicates (Li et al., 2017). Despite the fact that the Hukou system was relaxed in the early 1990s, “nearly all administrative activities, such as land distribution, housing, the issuance of identity cards, school

enrolment, medical insurance, and social security were—and still mostly are—based on an individual’s hukou status” (Li et al., 2017: 28).

These institutional practices have a significant implication for the agriculture sector and rural development. While agriculture is still the primary source of livelihood, the farmers lack capital and capabilities necessary for increasing production. According to Wu et al. (2020), a main reason for this capability constraint in the rural areas is institutional void within the existing education system. Compared to high-quality education available in the cities, the basic elementary education system is weakly established, and many children discontinue their studies at elementary or junior schools (Wu et al., 2020). The lack of technical and professional education services in most poor areas also exacerbates the skill deficit, preventing farmers from effectively participating in market activities (Guan et al., 2018). Most importantly, the Hukou system also affects market accessibility of the farmers by strengthening the belief that they should live in the same agricultural areas, farm the same land for generation and sell their produce to the local market (Bhatt et al., 2019; Wu et al., 2020). In this context, it is argued that the potential of sharing economy organisation in addressing poverty would be limited. They would need to diverge from the model, followed by traditional firms to bring long-term sustainable changes.

In the next section, we apply this theoretical understanding to two sharing economy business models and explore their potential in bridging the institutional voids and addressing poverty.

4.4 Research Method

To explore the research question, how *sharing economy business models bridge institutional voids and engage in the divergent change to address poverty at the BoP communities*, we identified two representative cases through our review of newspaper, social media and other websites. We used secondary data to conduct a case study of two sharing economy platforms working in rural China: Pinduoduo, which represents the socio-commerce-driven platform and NSB, representing an access-driven platform. We also conducted 10 interviews to adequately capture the potential and challenges that sharing economy organisations face in China. The interview participants included four academics, two non-governmental organisation (NGO) workers and four people who have participated in any sort of sharing activities. Due to the outbreak of COVID-19 pandemic, all interviews were conducted online, and the average of each interview lasted for approximately an hour. Oral consents were recorded before conducting the interview. The interviews helped in gaining a preliminary understanding of sharing economy in China. In the next section, we discuss the opinions of the participants on the sharing economy and its potential on BoP and then discuss the cases and their implications for theory and practice.

4.5 Findings: Definitions of Sharing Economy

Participants were first asked to interpret the term ‘sharing economy’, many participants had seen the sharing of resources such as information and physical properties as a critical characteristic of sharing economy. In addition, they had also emphasised on having the right/providing access for others to use such resources for a short period of time instead of obtaining them permanently. For instance, Participant D defined sharing economy as:

From my understandings, I interpret sharing economy as... umm... we publicise and utilise (some products or resources) ... where we can have access to these products or resources and use them for a short period. And where these products and resources may be used by many other people as well. This is one of the essential characteristics of sharing a product or sharing economy...

...(People will) Get the right to use (a product) for a period of time, and they don't need to purchase and pay for the cost of (the entire) product. They only need to pay for a small amount of money to obtain the right to use this product for a period, instead of obtaining them permanently.

Participants were then asked to provide examples which they perceived as sharing economy. The majority of the participants listed examples such as online information sharing, bike sharing, Didi, Uber and Airbnb as illustrations for the sharing economy. For example, Participant A explained that the reason for classifying the abovementioned examples as perfect illustrations for the sharing economy:

In other words, if someone has resources that are not in use, such as (spare) houses, or...other resources. If the resource... or a spare room that is not in use... then the person can choose to lease it. Someone who need housing or that resource can use it. And the house owner can also get financial return. This is the process I'm talking about.

In addition, few participants listed libraries, the traditional taxi industry and catering industry such as hotels as examples for sharing economy. For example, Participant C perceived the traditional taxi industry as another form of sharing economy, since taxi provides access for car usage to a larger population.

Umm...to be honest... in my opinion taxi... is another in disguised form of sharing economy. As I have mentioned earlier, it increases the usage of car to a larger population. (Participant C)

On the contrary, however, two participants provided a distinct and perhaps a more precise definition and examples of sharing economy. As an illustration, Participant E emphasised that for an organisation to be considered as a sharing economy, ‘it needs to have a business model. Secondly, it has to solve the problem of externality, in which it should not bring additional costs. In addition, it also has to solve specific needs.’ By ‘solving specific needs’, she further explained that “in fact, I found that the government is also establishing and building platforms that may ‘look’ like the sharing economy, but it (the government) really hasn’t done much research. It (the government) thinks it has meet/solved some needs. But in fact, people may have other needs instead. It is all the imaginary of the government, it is some needs that it (the government) imagined, and these needs are in fact false and are not the real needs by people. This is also a waste of resources.” Hence, she clearly indicated that

bike sharing was not sharing economy according to her definition. This was because bike sharing created externalities to the society, where the cost may have outweighed the social issues it aims to tackle.

After a large number of financial investments came in, there are so many incineration plants for the shared bikes and created tones of unnecessary wastes. That means that the bike-sharing actually brought great costs to the society in the end. This cost may be much greater than the social problems it solves. Well, I don't think this (bike-sharing) is an example of sharing economy model. It may be sought after by many people, who think it is a sharing economy. But since to be a sharing economy organisation, you should benefit the society... benefit to most of the society, or most of the public. But cost of it (bike-sharing) is way too high. (Participant E)

Similarly, Participant G also held different opinions as the majority of the participants did. When asked to provide examples of sharing economy, he put a clear line that for an activity to be classified as sharing in his opinion, it should not be conducted with a primary purpose of getting a commercial gain. His statements are listed below as an illustration:

As far as China is concerned, I feel that there are not many, perhaps less, of this sharing economy. So, what cases are sharing economy? I think the Didi can be regarded as sharing economy to a certain degree. For example, if an individual owner has free time, and he pick up passengers on Didi platform. I think this is a sharing economy. However, there are also professional drivers on Didi platform, which I don't think belongs to the sharing economy...

... Airbnb is also sharing economy to a certain extent. However, there are many homeowners renting on Airbnb for a commercial gain. I also think that these commercial rental housing is not sharing economy.

These interviews provide a preliminary insight into how the sharing economy is understood in China. The dominant narratives are around sharing goods and services among individuals, especially, information, cars, idle resources and other properties so that they do not go waste. Only one respondent suggested that sharing economy should be seen as a business model to solve the externality problems, where no additional costs should be created to society. Overall, these statements are consistent with the sharing economy literature that focuses on the demand-driven nature of the current sharing economy business model (Schor, 2016; Noesselt, 2020).

In the following sections, we discuss the two cases of sharing economy platforms working in rural China.

4.6 Case 1: Pinduoduo

Pinduoduo was founded in 2015 and with 400 million users in just three years, it is one of the most prominent social-commerce platforms in China (Chinese Internet Weekly, 2019). According to sharing economy policy experts, Pinduoduo exemplify a unique model of sharing economy through two characteristics: (a) it incentivises community group purchasing, and (b) it connects multiple buyers and suppliers through a multi-sided platform and facilitates direct sales between small farmers and consumers (Fan, 2020).

4.6.1 *Bridging Institutional Voids*

Even though agriculture is the main livelihood activities in rural areas, it suffers from many social and economic inefficiencies due to many institutional voids (Parthiban et al., 2020; Mair et al., 2012; London et al., 2014; Kistruck et al., 2015). Primarily, people living at the BoP lack education and skills needed for productivity enhancement in the rural economy (Guan et al., 2018; Li et al., 2017; Kistruck et al., 2013). Due to the informational asymmetry, smallholder farmers also find it challenging to get an accurate sense of market demand and supply (Kistruck et al., 2013; Li et al., 2019; Al-Hassan et al., 2013). Further, the agriculture supply chain is unevenly distributed in production, packaging, delivery and retail (Kistruck et al., 2013; Trienekens, 2011). Without logistic support, farmers rely on middlemen/distributors for transporting the produce to wholesale markets in the cities (Kistruck et al., 2013; Parthiban et al., 2021). This creates the biggest share of profit for the middlemen but generates meagre income for the farmers (Kistruck et al., 2013). Additionally, consumers bear the high cost imposed by these multiple layers in the process (Aker, 2011; Shalini et al., 2021).

4.6.2 *Bridging Institutional Voids: Operating Model*

To solve these problems, Pinduoduo aims to connect farmers (the first mile) directly with consumers (the last mile). The objective of Pinduoduo is to remove poverty by increasing the income of farmers and by rebuilding local rural economy (Liu, 2019). Pinduoduo uses a business-oriented model to economically empower smallholder farmers in the poverty-stricken villages. According to media reports, in 2018, Pinduoduo supported over 680,000 farmers located in national-level poverty-stricken counties to sell their agricultural produces online and created more than 300,000 jobs across the supply chain (Liu, 2019; Li, 2019a, b).

As noted above, the platform uses a community group-buying model to aggregate scattered demand (Shalini et al., 2021; Pillai et al., 2021a). The group-buying model relies on social media network-based marketing approach to solve the problem of customer cost (Liu, 2020). Furthermore, the group-buying model also helps in generating large volumes of orders and reduces information and search cost for the farmers (Pillai et al., 2021a). In the following sections, we provide details on the operating model of the platform.

To address the complementary institutional voids (i.e. skill gap and market access), Pinduoduo has taken two actions:

- (a) **Training:** To address the skill gaps, the platform provides necessary skill training to the farmers, so that they are able to sell directly on the platform without relying on the intermediaries of the traditional supply chain (Wang, 2020). For example, to help farmers learn how to sell directly on Pinduoduo, the Duo Duo Farm program provides week-long training sessions on important skills, such as

e-commerce, finance, business operations and online marketing in rural Yunan (Pinduoduo, 2019). The training also involves step-by-step guide on how to sell on the Pinduoduo platform. Farmers are also encouraged to form co-ops with neighbouring farmers so that they have more bargaining power and could earn more their harvest (Pinduoduo, 2019).

To precisely match the supply of agricultural products and the demand in the market, Pinduoduo uses an AI-powered system (Handley, 2020). This system collects data on farm locations, farm produce and the total time period for production and produces predictive models for effective crop yield.

- (b) Market access and growth: The AI-driven system also helps in understanding customer's behaviours and in aggregating their scattered demands to match with the availability of agricultural products. As noted above, the platform aggregate scattered demand through 'Pin' — a socialising shopping experience where customers can interact with friends and even strangers online to have bulk purchases with discounts. As per the company, "our buyers share their purchase information with their friends, family and other social contacts... and new buyers, in turn, refer our platform to their broader networks of friends and family. This interactive feature also transforms online shopping into a fun and interactive experience" (Allison, 2020).

The group-buying feature on the platform, which incentivises social media sharing through group discounts, helps the platform acquire users by buyers themselves at a very low cost.

4.6.3 Group Buying to Aggregate the Scattered Demand

The community leaders play a vital role in the community group-buying model (Pillai et al., 2021a; Allison, 2020). These community leaders are typically a stay-at-home mum or a community shop owner (Liu, 2020). The key responsibilities of the leaders include: creating WeChat groups of residents living in the same community; posting products links of social media; place groups' orders with suppliers and coordinate food orders on behalf of a group of people (Liu, 2020). They receive commissions based on the orders placed. Once members placed the order, Pinduoduo collects these group orders and convey the information to farmers. Farmers can get market information on the prices by comparing production and prices with their counterparts across the country and sell their products to consumers at the market price (Liu, 2019). Once the product is delivered, users pick up their orders from the community leader. According to Mo Daiqing, a senior analyst at the Internet Economy Institute, the community group buying is a kind of sharing economy as it provides pre-sale and after-sale services and solves the last-mile delivery problem (Pillai et al., 2021a; Fan, 2020).

4.7 Case 2: NSB

NSB is an agricultural machinery-sharing platform and aims to connect hundreds of millions of farmers in rural areas in China. NSB is a start-up owned by Shenniu Tractor Co. Ltd. (NSB, 2020e). At present, NSB is in its infancy and is recruiting regional partners (NSB, 2020c). NSB is committed to serving 200 million farmers, one million farmer cooperatives, five million professional machinery drivers (seasonally full-time) and 50 million agricultural machinery employees (related people, such as manufacturing workers, repairmen). NSB aims to help farmers who cannot afford the agriculture machinery and services easily by connecting them to suppliers (individuals and companies) of agricultural machinery and by facilitating the use of idle resources.

Although China has put a lot of efforts to address poverty in rural areas, agricultural productivity is still low and the living standard of farmers are still significantly lower compared to their urban counterparts (Yu, 2018; Zou & Zhang, 2019). Small family-run farms are dominant in rural China (Ma, 2019; Wang, 2019), and the number of small farmers account for more than 98% of the total (see Table 4.1). By 2018, China's cultivated land area was 1,432,960 square kilometres, ranking third in the world (behind the United States of America and India). At present, there are 210 million agriculture households in China, with an average operating scale of 1.3

Table 4.1 The Census of Chinese Agricultural Sector

	Total (million)
People in agriculture sector	314.22
Household in agriculture	207.43
(large household)	3.98
Organisation	2.04
(farmer cooperative)	0.91

Annotation

1. China conducted a comprehensive survey of the agricultural sector in 2001, 2008 and 2017. We choose to use the third National Agricultural Census (2017).
2. In the census, agriculture includes plant-products industry, animal husbandry, forestry industry and fishery.
3. Household in agriculture: Household engaged in plant-products industry, animal husbandry, forestry industry and fishery.
4. Large household: Households with large scale of agricultural production and operation (household having more than 16 acres farmland or having facilities which cover more than 4 acres; or annual production of 200 pigs, or 20 cattle or 100 sheep or 10,000 chickens; or 90 acres of woodland; or with the fishery annual income of more than 300,000 yuan).
5. Organisation: Organisation engaged in plant-products industry, animal husbandry, forestry industry and fishery.
6. Farmer cooperative: A form of farmers cooperating in agricultural production based on China's system.

Source: National Agricultural Census (2017)

acres, and more than 20 million households operating under 1.65 acres of farmland (Wang, 2019).

In recent years, large agricultural households and cooperatives have used a variety of machinery and equipment. In 2016, China had 26.9 million tractors, 5.13 million tillers, 8.25 million rotary tillers, 6.52 million planters, 680,000 rice transplanters, 1.14 million combine harvesters, and 10.31 million motorised threshers (National Agricultural Census, 2017). However, as noted above, a majority of farmers face the problem in accessing advance machinery due to inefficient asset utilisation, uneven distribution of resources, and information asymmetry (Chen & Ma, 2016; Zhang & Luo, 2018). Although it seems that China has a large number of agricultural machinery, a large number of small farmers are unable to effectively access the agricultural equipment they need (Zhang et al., 2017).

To enable small farmers to access the machinery and improve their income by sharing the idle equipment, NSB is building a machinery-sharing platform (NSB, 2020d) (Fig. 4.1). The users who need farm services can place orders for various goods and services (such as sowing, fertilising, protecting plants, harvesting, pruning, picking, primary processing and transporting). Simultaneously, the suppliers who own the agricultural equipment can take orders and provide these farming services by sharing their equipment. NSB is building a sharing platform between hundreds of millions of farmers and promoting agricultural machinery sharing.

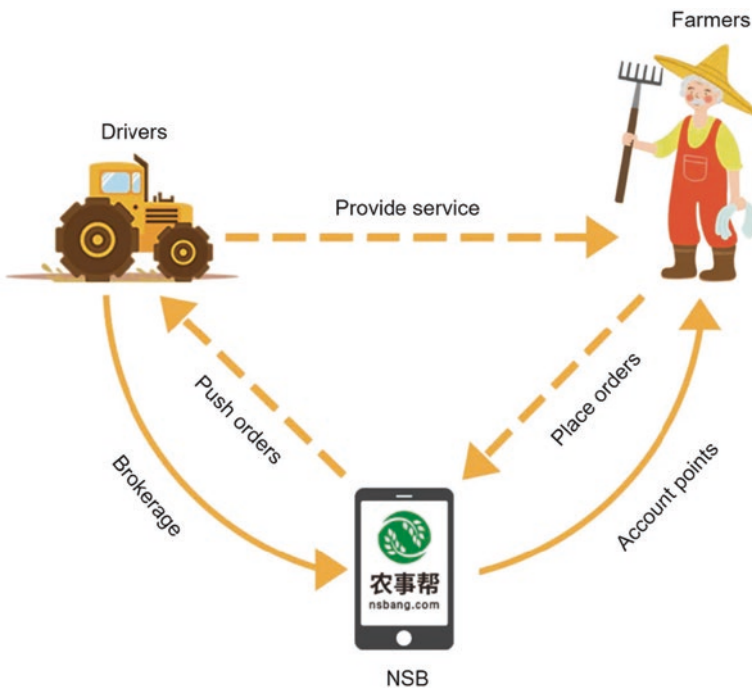


Fig. 4.1 The function of NSB's platform (Adapted from NSB, 2020a)

The sharing of agricultural machinery is important in the rural context and has been repeatedly mentioned by the agricultural machinery industry (Zhang & Li, 2018; Xu & Zhang, 2018a, b). NSB is aiming to make machinery sharing possible in China (NSB, 2020b).

NSB has found that in the process of agricultural machinery promotion, price is an important factor for farmers to consider. Many farmers would rather choose inefficient manual farming than purchasing efficient but expensive farm machinery. Though the government is providing various subsidies to purchase agricultural machinery, many farmers are still deterred by the high prices of ‘advanced equipment’ (Xiao, 2019). In addition, the high maintenance cost and low utilisation rate of agricultural machinery are also perceived as the problems of the Chinese agricultural machinery market (Nongjitong, 2017; Liu, 2017; NSB, 2020b).

Learning from Uber’s sharing model, NSB believes that through the sharing of technology, it can quickly match resources, improve machinery utilisation and reduce the usage cost (NSB, 2020a). The main body of NSB is a sharing platform (see Fig. 4.2), where it aims to set up service outlets in rural areas and adopt an online-to-offline (O2O) mode to promote sharing services (NSB, 2020a). At the initial stage, NSB also engaged in leasing and retailing agricultural machinery, providing and advertising farming services and distributing agricultural products.

The sharing economy model adopted by NSB also illustrates the challenges faced by sharing economy platform in the agriculture sector (Wang & Xiao, 2007;

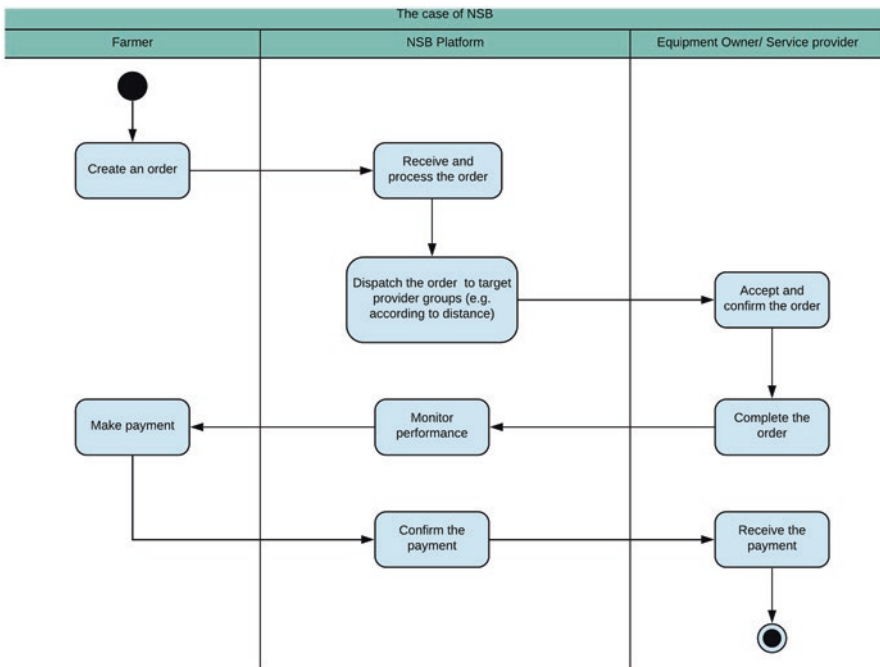


Fig. 4.2 The sharing process in NSB

Chen & Fang, 2011; Li, 2019a, b). One of the key challenges is getting enough users. If a company does not have enough customers, it is difficult for the company to scale and ensure efficiency in its platform (Ma, 2016; Tang & Wu, 2015; Zheng, 2016). Another challenge faced by the sharing economy platforms such as NSB is changing potential customers' original behavioural habits. In China, some small farmers still rely on manual planting and are reluctant to adopt mechanised planting (Wang et al., 2015). Adoption of modern farming methods is another key challenge. By facilitating access over ownership, NSB is helping farmers to experiment with new technologies without creating too much economic burden. The farmers also face challenges in adopting platform application. According to the Statistical Report on the Development of Internet in China, (China Internet Network Information Center, 2020), nearly half of the rural areas are not covered by the Internet (CGTN, 2020). Farmers may not be able to use the NSB sharing platform because they cannot access the Internet or feel uncomfortable using mobile devices (Chinese Business Information, 2019). To address this challenge, NSB is in the process of recruiting offline partners who provide face-to-face assistance to farmers and verify the quality of services (NSB, 2020b).

4.8 Discussion and Conclusion

The sharing economy has become an important buzzword in China. However, most of the research is urban-centric and focuses on the products, access, and demand issues from urban consumers' perspective. Although sharing economy is a priority area for the Chinese government and there have been many government guidelines committing to support the sector (The State Council, 2018; National Development and Reform Commission, 2020), its potential in addressing poverty (an important concern for the government) is still underexplored. In this research, through the two case studies of the sharing economy platforms, we explored the potential and challenges of sharing economy in bridging institutional voids and addressing poverty in rural China.

As the two case studies demonstrate, sharing economy businesses working in rural China experience various challenges such as skill gap, market inaccessibility, and unavailability of goods and services due to market inconformity (i.e. different market development levels across regions) (Wu et al., 2020).

To bridge these institutional voids, Pinduoduo focuses on training and capacity building through organising farmers in cooperatives (for group producing) (Bhatt, 2017; Parthiban et al., 2020). Likewise, the platform addresses the issue of market access and segregated demand through group buying (Pillai et al., 2021a). The group selling and group buying facilitated through Pinduoduo diverge from the sharing economy firms in BoP communities and demonstrate how platforms can engage in institutional entrepreneurship.

As demonstrated in the findings section, community social networks are at the core of institutional entrepreneurship process (Bhatt, 2017; Qureshi et al., 2016).

These networks are facilitated through online social media websites such as WeChat and QQ and are also rooted in the daily face-to-face social interactions of the community members. It is not surprising that community group buying is gaining prominence in the lower-tier cities where people have enough purchasing power and dense community networks (Liu, 2020). The community group buying provides farmers access to a large market and lowers the market search cost. Furthermore, the group producing through cooperative structures helps farmers by increasing their bargaining power (Mannan & Pek, 2021; Pillai et al., 2021b). By utilising the offline and online community social network of producers and consumers, Pinduoduo creates alternate forms of institutional arrangements that diverge from the practices associated with the existing sharing economy firms (Riaz & Qureshi, 2017; Parthiban et al., 2020).

While Pinduoduo offers a unique model of sharing economy, the model is not without its critics. The Pinduoduo model that facilitates community buying and selling requires major upfront investment in logistics and supply chains (Liu, 2020). While the platform reduces the cost of operation by relying on its group purchasing feature, it is still capital intensive, and therefore, it might not be replicable for other aspiring sharing economy organisations. Furthermore, such platforms are often efficiency-oriented and have monopolistic tendencies. Thus, the risk of mission drift in these platforms is higher.

Similar to Pinduoduo, NSB also relies on local social networks to facilitate the access of local machinery. As large machinery is costly and unaffordable to most farmers, community members often rely on each other to access resources. NSB uses this social capital in the communities to facilitate access to underutilised resources (cf Pillai et al., 2021b). In that sense, our research complements the work of Zhang and Li (2018), who studied the sharing of agricultural machinery in the rural areas of Northeast China. As large machinery is not affordable to most of the farmers, the authors found that most farmers in the Northeast preferred to purchase agricultural machinery either through loans or joint payments with others. Accordingly, two types of ownership model were found: In the first case, the 'buyer' monopolise the ownership of agricultural machinery; in the second case, several village members jointly contribute to the purchase of agricultural machinery and share the ownership. In the first case, villagers hope to share the right to use to compensate for the purchase cost. The second case itself is an embodiment of the sharing economy (collaborative consumption) (Hota et al., 2019; Hota & Mitra, 2021).

Our work contributes to current research by highlighting non-economic factors, Renqing/Guanxi⁴ in organising and facilitating sharing economy activities in rural China. While economic incentives such as saving the cost (as in the case of NSB) and increasing the income (as seen in the case of Pinduoduo) are important to a degree (Hamari et al., 2016), Renqing/Guanxi is an important incentive factor for farmers to form cooperatives and share agricultural machinery. If the villagers

⁴Guanxi refers to the social networking, relationships or connections among people and the closest translation of 'Renqing' in English is reciprocity

cannot afford agricultural machinery, they can request the right to use from their kinsfolks or acquaintances. There may be no clear exchange of economic interests in this kind of sharing, but ‘Renqing/Guanxi’ accumulate or decrease in sharing activities. The extant research has discussed the role of social networks in enabling or constraining entrepreneurial activities (Bhatt et al., 2019; Qureshi et al., 2016). We extend this research by highlighting how sharing economy platforms can use existing social capital to facilitate access to underutilised resources and build collective capacities needed to address poverty.

Our findings also have significant implication for the scaling of sharing economy platforms. While Pinduoduo has scaled through using ‘Pin’ (team purchase) and government partnership, in its current format, NSB is working without government support and subsidies, therefore scaling this platform has been challenging. There are also issues related to the limited IT infrastructure and lack of awareness about emerging technologies. While NSB claims that the people at BoP are gradually accepting information technologies, the progress is still slow. Therefore, to increase farmers’ participation in the sharing platform and to guarantee quality services, the learning from the NSB shows that it is important to recruit offline partners who can promote the platform, verify the equipment and assess the quality of farming service (NSB, 2020a; cf Nungsari & Chuah, 2021).

To conclude, this research critically examines the potential of sharing economy in the rural context. Rural poverty is still a challenge in China, and new innovative models are required to provide sustainable solutions. The sharing economy platforms have the potential to address poverty by increasing productivity and creating income opportunities. While sharing economy in urban area offers new way of consumption (Hamari et al., 2016), sharing economy at the BoP has the potential to enhance the productivity by facilitating access to idle and necessary resources. In the BoP context, sharing economy can be a tool to facilitate learning skills through knowledge sharing platform and enhance productivity through equipment sharing platform. These shared economic activities can help in accessing the means of production⁵ more easily and thus can improve production efficiency. While our research provides preliminary insights, in-depth case studies of sharing economy platforms are needed to realise the potential of sharing in BoP communities.

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⁵In economics and sociology, the means of production (also called capital goods) are physical and non-financial inputs used in the production of goods and services with economic value.

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