

Value creation in the digital platform and the emergence of grassroots entrepreneurs

Summary:

This paper explores a digital technology-based business model that enables marginalised communities to engage in commercial activities without access to the initial capital. We observe a great need for a perspective on how marginalised communities create and capture value through app-based businesses. To address these needs, we aim at answering two questions: (1) How does relationship and engagement occur in marketplace platform? (2) How do grassroots entrepreneurs create and capture value within a platform? Based on the case of Kuaishou app users in China, we identified four types of relationships that transform the benefits of technology into value creation for grassroots entrepreneurs. The four types of engagement within the app reflect different ways in which app users create both non-monetary (Type 1) and monetary values (Type 2, 3, 4) leading to the development of grassroots entrepreneurs. The findings of the research suggest that innovation embedded in digital technology-based economic activity helps reshape the ways in which value is created beyond profit. More importantly, digital platforms play an important role in attaining inclusive and just growth for vulnerable communities.

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ABSTRACT

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Keywords: Business model innovation, digital platforms, grassroot entrepreneurs, capability enhancement, inclusive development, marginalised communities

1. INTRODUCTION

Current understanding on inclusive development focuses our attention to business models that make use of digital technologies and platforms. This is the process by which decreasing cost of connections foster and support new exchange mechanisms to generate value creation (Amit and Zott, 2001, 2012) towards network-based systems (Daft and Lewin, 1993; Dunbar, and Starbuck, 2006). Many digital platforms for online-based business models including Alibaba, Amazon, and eBay enable market transactions with lower transaction costs and greater efficiency. The ways in which the marginalised communities are engaging with such platforms, however, remains limited. The poor, in particular the youth and women, are often being marginalised and excluded from market participation due to disproportionate access to education, basic infrastructure and information. As stated by the United Nations, inclusive development including these segments into the mainstream market and income creation activities is an important dimension to achieve Sustainable Development Goals (UN-SDGs). While eradication of poverty and inequality has been a key target of international development for a long time, challenges faced by the global community are enormous. We propose that digital technology can be important route for the development of grassroots entrepreneurship.

First, while there is substantial research on information and communication technology (ICT), and its impact on development (Heeks, 2010; Fu, 2013; Fu and Akter, 2016), little is known about the ethical business models that are needed to transform the benefits of technology into capability enhancement and income for poorer people (Payne and Raiborn, 2001). Second, although there is some research on e-business and job creation, these studies mostly focus on e-trading businesses that sell products or services online. Studies on what type of new business model can enable the poor to benefit from digital technology are missing. Even for development studies and studies for inclusive development, this is an underexplored area of research. There is, however, substantial literature on inclusive innovation and development, disruptive innovation, and business for the *Base of the Pyramid* (Chataway et al., 2013; Radjou et al., 2012; Prahalad, 2005; Yunus et al., 2010; Fu et al., 2018). The focus of our study is on understanding the interconnections and interdependencies between app users involved in entrepreneurial activity within the digital application – a set of unique relationships leading to income creation.

There are important challenges addressed by the literature on digital businesses suggesting that considerable initial capital investment is required to start a business. In addition, substantial literature on inclusive innovation and disruptive innovation provides important background to understand the process of innovation at the base of the pyramid (Ghuri et al., 2014; Chataway et al., 2013; Radjou et al., 2012; Prahalad, 2005; Yunus et al., 2010; Fu et al., 2018), however a further understanding of the interaction process leading to income creation for the poor is required. An interesting study by Leong et al (2016) proposed that digital networks provide grassroots entrepreneurs with more choices and opportunities to progress, partly because of the understanding that the base of the *economic pyramid* is not necessarily the bottom of the *knowledge and skills pyramid* (Leong et al., 2016).

As stated by the UN, in 2013 the percentage of people living in extreme poverty globally has fallen rapidly to a third of 1990 numbers. The latest global estimate suggests that 11 per cent of the world population (equals to 783 million people) living on less than US\$ 1.90 a day (extreme poverty level), this fell during these two decades from 26.9 percent in 2000 to 9.2 percent in 2017 (United Nations Report, 2018). Now despite there is growing interest of both

private sectors and country governments to promote inclusive entrepreneurship, the number of people living below the poverty benchmark has remained large.

For analytical purposes, we propose to differentiate four types of relationships occur within the app in the form of content creation (Type 1), community building (Type 2), education and skill-building (Type 3), and buying/selling (Type 4). The adoption of technology, however, relies on various factors. In this paper, we recognise the importance of adoption as well as active participation as two major concepts that are significant for the technology adoption of marginalised communities.

This paper is divided into three sections. First, we explore the concept of digital network to place them in the context of entrepreneurship literature to explore characteristics of grassroots entrepreneurship and then develop an analytical framework. Second, we provided an account of the research design and related methodology. Third, three types of interconnections and interdependencies between app users and digital platform providers are identified to reflect how a set of unique relationships emerge in different income creation forms. Finally, we highlight that active participation from app users plays an important role not only as solutions to overcome challenges to market products/services but also to scale up access to networks.

2. THEORETICAL BACKGROUND AND RATIONALE

This focus on inclusive development foregrounds attention to changing conceptions of markets and business models that make use of emerging technologies and platforms. To make progress on United Nations' SDGs, technology, and innovation play an important role in attaining sustainable, inclusive, and just growth. With the emergence of 'knowledge societies' and the rapid pace of new technological advances, the need for innovative solutions has become extremely important (Tasavori, 2016). Emerging digital technologies can become both an equaliser and a disruptive factor in labour markets, they can empower both women and youth. These developments not only create new drivers for economic growth but also lead to the upgrading capabilities of small business owners, which in turn enhances the welfare of the poor (Sen, 1999; Ghauri et al., 2018). Mobile phones, for example, significantly reduce communication and information costs for the poor. Existing studies also reveal that ICT helps improve the business opportunity for a rural community that is often neglected in the pursuit of inclusive development (Green, 2010; Leong et al., 2016, p.4). In fact, the innovative business model is crucial for economic and social value creation in conditions of deep poverty (Seelos and Mair, 2007). Technology must be complemented by a business model that links technology and demand in the market (Chesbrough, 2007).

From the literature, we understand that innovation, and new technologies have changed social networks and the ways in which business is conducted in the 20th century. It is important to emphasise the potential impacts of digital innovation for marginalised communities in emerging market studies (Ghauri et al., 2018). Scholars argued that marginalised communities present a profitable market opportunity (Seelos and Mair, 2007; Khavul, 2010; Tasavori et al., 2016; Prahalad and Hammond 2002). Thus, before reviewing the sources of value creation implied by the range of theoretical perspectives in the entrepreneurship literature, this section begins with highlighting the value creation being potentially embedded in the digital technology-based business model.

There are several ways in which value creation activities can be structured and conducted. These include the ease of extending a firm's product range to include complementary products and services, improved access to complementary assets, and new forms of collaboration among different stakeholders, followed by the potential reduction of asymmetric information among economic agents (Amit and Zott, 2001). Some grassroots

entrepreneurship examples include rural development in China that is led by the government (Wu, 2012), an *e-Choupal* or virtual marketplace for farmers in Indian villages that is undertaken by a business conglomerate (Hammond and Prahalad, 2004), mobile banking in Indonesia that is driven by banks (Alfansi and Sargeant, 2000), and the ‘telephone ladies’ program of Bangladesh that is initiated by a social enterprise (Mair and Marti, 2009). These characteristics allow for profound changes in the ways in which business is conducted, and these new opportunities are leading to value and wealth creation for the actors involved. This focus has tended to neglect the process that shows the ways in which marginalised communities empower and develop sharing mechanisms among them as a development process to establish grassroots entrepreneurship.

Grassroots entrepreneurship involves digital networks and social entrepreneurship that link the performance of home-scale businesses and the capability upgrade to provide more explanatory power (Ghuri, et al., 2014). Collective phenomena, in addition to individual efforts, have a great influence on capability enhancement and value creation for businesses in marginalised communities. For grassroots entrepreneurship, a key issue is understanding the role of digital networking activity that best support the poor in skills development. Furthermore, it assumes that the capability enhancement depends on factors such as the skills needed to deliver online business, the shifting role from the human-to-technology operating system, and the user motivation to choose digital technology-based business models, that enable entrepreneurial journey. Additionally, the interaction between technology users and the online platform is anticipated to influence growth and sustainable development. At present, not only the advantage of using technology platforms for business has been widely recognised as a mechanism to overcome barriers to create value within a business operation, but also it is understood as a learning mechanism for marginalised communities.

From the literature, we understood that the small market size and the lack of purchasing power are often considered an issue for marginalised communities, at least in the early stage. This issue makes them less attractive to profit-seeking firms who are accustomed to producing large-scale products and services. In addition, scale constraint is further complicated by the chicken-and-egg problem involved in the problem of infrastructure and access to education and technology. Localised skills and a lower cost of distribution enables small size and new entrepreneurs to capture new opportunities. Despite the importance, existing studies seldom focus on the factors that influence ICT use and its adoption by disadvantaged users, without examining the affordability of ICT and its contribution to development (Hsieh *et al.*, 2008; Pee et al., 2010; Chauduri, 2012).

These phenomena reflect the population in many countries where a significant proportion of society has been excluded from the ‘fruits of growth’ (Chataway, Hanlin, and Kaplinsky, 2013, p.1). The capital-intensive nature of development, along with its scale intensity and its dependency on infrastructure and skilled labour contributes towards uneven development and causes disadvantages for the large segment of the population living in poverty in many countries. Further, Chataway, Hanlin, and Kaplinsky (2014) argue that the global dispersion of technological capability as a result of the concentration of innovative capability in high-income markets has contributed to increasing entrepreneurship in these countries. From the perspective of entrepreneurs and businesses, the major proportion of world's population living in marginalised communities appears to be a large potential market.

Content creation and curation encompasses activities such as co-designing a seller’s profile, improving pictures of listings, or active selection of listings (Tauscher, 2018). However, there is yet another important element that contributes to the engagement of content creators by providing learning opportunities and training for app users.

3. Researching the processes of value creation within the digital platform

This study derived from a research question that seeks to explore how digital platform enables the poor without initial capital to engage in marketplace. To explore this question, the research project was carried out by studying the rapidly growing online platform Kwai apps developed by Kuaishou Company in China. The company has 160 million daily active users (DAUs) and generated around \$2.8 billion in revenue in 2018 (Goldman Sachs, 2022). Overall, 16 million users have earned an income on the platform. In addition to primary data collection involving Kuaishou executives, staff, and app users in China, we also utilized 30 stories of user experience published by the Kuaishou Research Centre. Kuaishou is considered an appropriate choice due to the main objective to address poverty through a technology-enabled business model that seeks to provide access to business opportunities to those marginalised and excluded from ‘typical’ business. During the conception of the business idea, the Kwai founder stated that at least 73 percent of China’s demographic structure lives outside first-tier cities and needs better exposure to improve their quality of life (Kuaishou Technology Report, 2022). A single case study chosen for this project provides a distinct advantage whereas large technology companies tend to focus on the high-profile users located in the ‘first cities’ i.e., Beijing and Shanghai, Kwai users are mostly located in rural regions and smaller cities. In addition to analysing app user experiences to better understand the ways in which values are created and captured, we are also interested to explore the ways in which companies contribute to the development of grassroots entrepreneurs. It is important to note that the Kuaishou app was developed to enable app users located in rural areas in China to start their entrepreneurial journey.

Our study considers different factors regarding the technological impact that have become the driver of entrepreneurial activity leading to value creation. Considering the exploratory nature of our research, a qualitative method and an inductive approach were applied as it provides in-depth insights and understanding of the problem at hand. More importantly, the methods were designed to help us understand the meanings of real-life phenomena as they can go beyond the measurement of observable behaviour and explore the meaning of underlying action (the ‘how’ and ‘why’). These are the questions that are much in need of examination in the case of research in emerging markets (Buckley and Chapman, 1996; Ghauri et al., 2020). Finally, a single case study research is suitable due to the complexity of the research phenomenon, the digital technology-based business model for marginalised communities. This approach enables the researcher to expand and generalise theories by combining the existing theoretical knowledge with empirical insights (Yin, 2003; Eisenhardt, 1989).

Data were gathered by means of in-person interviews with Kuaishou executives, staff, and app users conducted between March and April 2019 followed by analysing Kwai app user experiences through text analysis. Selecting organisation to be studied is one of the most difficult steps in case study research (Ghauri, 2004). The approach to data collection is designed to generate insights regarding how the company facilitates entrepreneurial activities followed by interviewing app users in terms of how they perceive the Kwai app. In addition, company executives who play important roles in strategic decision-making are interviewed. A list of interviewees is provided in Appendix 1.

To obtain qualitative data, the researcher must be “on-site observing, talking with people, and going through program records” (Patton, 1990. p.244). During March and April 2019, three researchers spent nearly one month of fieldwork. This was conducted in Beijing China where Kuaishou headquarter is located. We selected interview participants from the app’s profile as study samples that represent varieties (as seen in table 1 below) and we used this

identification to better understand the ways in which different activities are organised within the app.

	Marketplace attributes	Specifications
Value Creation dimension	Key activity	Data services Community building Content creation Companionship
Value delivery dimension	Transaction content	Product Service Entertainment Education
Value Capture dimension	Revenue source	Commissions Subscriptions Advertising Donation/gift

Table 1. Criteria used to select interview participants (adopted from Tauscher and Laudien (2018) with additional specifications emerged from our data.

Within the process of analysing their engagement with the platform, we included four content creators who provide sufficient information for defined key activity and specifications. Prior research has shown that this methodology is valid for analysing entrepreneurial ventures (Hartmann et al, 2014). Four app users were interviewed through pre-arranged telephone interviews and two researchers were present at each interview. The length of the interviews varied from 45 minutes to two hours. Where the participants agreed, interviews were digitally recorded, and notes were taken. Notes, including all the details discussed by the interviewees, were written up without delay. As the majority of the interviews were conducted in Mandarin, the transcript was recorded in this language and later translated to English and checked by two researchers, who were fluent in English and Chinese, using the back-translation technique. Analysis was undertaken utilising the English transcript. In a typical interview, a moderator, our research partner from a local university in Beijing, started the interviews, we then followed up with more questions to keep the interview focused. In this format, dynamic conversations about topics of interest led us to new discoveries and directions. We explore all the elements included in our conceptual digital-business model and how it is perceived and applied differently by app users. For data analysis, we have followed the procedure suggested by Miles and Huberman (1994) and Ghauri (2004). Furthermore, data analysis consists of categorising, tabulating, testing, and recombining evidence to address the initial propositions of our study. The process has been described as “an array of interpretative techniques which seek to describe, translate, and come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world” (Van Maanen, 1983, p.9).

In this study, we started off with qualitative content analysis and codified observations with regard to the selected variables. We represented each of the specifications from Table 1 to assess whether the specification is reflected in the engagement/relationship that occurs among app users. Following data collection, three stages of data analysis were undertaken: (1) verbatim transcription and content analysis of the transcripts, (2) data grouping, and (3) coding. The output of the coding process is summarised in Appendix 2.

No	Page no	Name	Kuaishou ID	Province	1 st order of theme Key activity	2nd order concep Value creation di
1	80	Handy Geng	Vshougong	Hebei	Selling replica waste materials	Content creation
2	89	David Evans	ukdaiwei	Ningxia	Teaching chemical experiments through humorous explanations to cultivate children's scientific thinking	Content creation
3	99	Zhu Yue	Zhuofeiji8888	Liaoning	Filming the entire process of building an airplane	Content creation
4	107	Bao Yu	Wang376612192	Hebei	Presenting daily life of a truck driver	Community build
5	126	Xiaoliang	Wawawawa	Jiangsu	Selling clothes and guiding people to start a business together	Community build
6	133	Shen Junshan	v4444444	Henan	Showing how to grow seasonal fruits	Content creation
7	147	Shancun Erge	miaosi11	Sichuan	Displaying the freshness, sweetness, and juiciness of the fruits	Content creation
8	155	Old Qiao	Shanxilaoqiao	Shaanxi	Creating tutorials on homemade cuisine	Content creation
9	167	Hao dong	AAAA9999	Chongqing	Producing sitcom-like household videos	Community build
10	182	Lan Ruiyuan	Lanruiyuan	Jiangxi	Teaching Ms Excel skills (table formatting, data analysis)	Community build

4. The four types of value creation and how it evolves within the app

The mechanisms to create value within the app can be segmented into four types. First, there is a high percentage of users posting daily content without engaging in buying and selling products. Second, there are app users providing training for the followers and teaching online classrooms. Third, app users earn from donations, virtual gifts, and paid subscriptions. Fourth, app users are creating jobs for their followers and engaging in the making of skill-based content. The primary characteristics of the evolving relationships between Types 1 – 4 are based on the accumulated learning and the improvement of knowledge that enable the app users to create an evolving relationship with their followers. The interview and the case studies highlight that app users may be simultaneously Type 1 when only posting and showcasing their daily life but can also engage in two or multiple types.

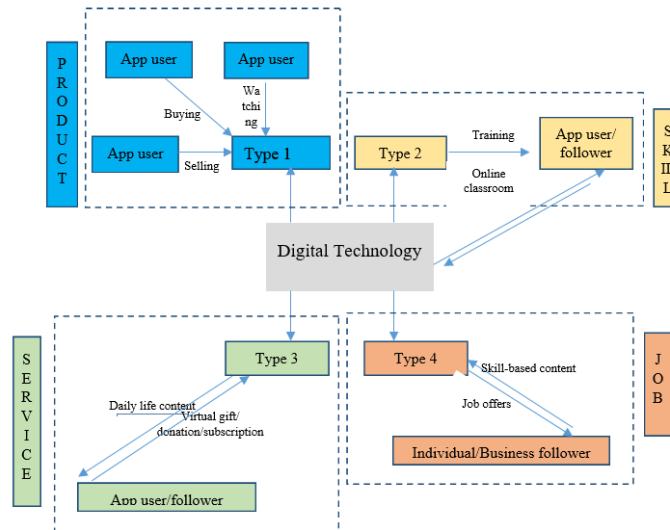


Figure 3. Four different forms of value creation within the app

Thus, a representative of Type 1 noted that “before using the apps they tend not to feel seen” due to the lack of access in the village and that they “did not feel empowered” due to poverty and limited access to find a job beyond their village. These perceptions were common that people located in rural are being limited to farming jobs or construction work. According to the National Bureau of Statistics of China, as of 2018, only 13% of China’s population had received higher education, whereas 87% of the population had not (China Statistical Yearbook, 2018). Thus, the initial conception of Kuaishou is to help the neglected majority of China’s population mainly to allow them to express themselves and to evolve the community using ‘their own wits, talents, and ideas’.

For analytical purposes, self-recognition has been identified as being one of the most key important elements as Kuaishou offers a safe space for ordinary people to showcase their daily life. Kwai app users did not feel the need to polish or refine their content to impress the public or to get followers. These highlights fundamental differences compared to similar platforms such as *Instagram*, *Facebook*, or a Chinese-based *TikTok* app that heavily promotes a lifestyle. Thus, “when you open the *Instagram* app, you will be thinking ‘oh these young people look fabulous,’ or ‘the picture looks very professional’. Well, if I am not these kinds of people”. The app user would feel distant. During the interview, terms such as ‘ordinary people’ and ‘ordinary lifestyle’ were often used. This is important to acknowledge that the app allows marginalised communities to express themselves without hesitation. These processes are then framed within how real life is perceived by app users is important. In Type 1, it is important to feel included, and Kuaishou app enables them to learn about the life of others that are ‘similar to theirs’. Thus, it is by lowering the technology threshold, the platform allows more ordinary people to record and share their stories through short video streaming. “Through AI algorithms, we managed to more precisely match rural users with others who share the same interests and hobbies.” [KwaiStaff_5]. One interviewee discussed “Tech companies are usually aiming for as many users that are the top people, but Kwai is different”. In this case, the digital platform allows app users to showcase and post their skills and creativity at home through the app. This led to Type 2 value creation where app users can buy or sell products via the e-commerce sites to then proceed with the transaction. A key issue with this value creation is the evolving relationship between individual users to become seller/buyer relationship. This relationship reflects how important to be able to access the network of buyers with limited or zero capital.

For app users, a digital platform such as Kuaishou plays a role as a vehicle for knowledge diffusion where individual app users can showcase their ability, skills, and expertise that contribute towards self-development, mainly their confidence. This distinguished feature unfolds how the adoption of technology can be done by poor people including illiterates. “I have met an old lady in the village who’s using the Kuaishou app to record her life. When I asked her the name of the app, she had no idea. Because she couldn't read. But she was able to upload a video of her sunflower beds and sell those flowers through the app. That is how easy it is to use the Kuaishou app and this has been the focus of our development.” [KwaiStaff_1]. Literacy and digital skills required for the use of the digital platform are no longer to be a barrier for the poor.

On Kuaishou, users can see simple homemade lunch idea photographed against a modest kitchen wall, or in another post, some DIY (do-it-yourself) rattan baskets were showcased to demonstrate one’s skill and authentic life. There was no longer a visible separation between work life and home life. The production process of such household items increasingly becomes part of the narrative and is central to individual capability enhancement. Digital technology fundamentally changes how entrepreneurial processes unfold at the individual level. During our study, more than 16 million people in rural areas received incomes through the platform in 2018, among whom about 3.4 million people came from national-level poverty-stricken counties. As described by Kwai users and staff “When Kwai first started, we offered a simple concept to upload a picture with GIF format (a few seconds of moving picture). But in three years’ time, we developed a feature to upload a short video to showcase daily lives – allowing users to display their own ability” [KwaiStaff_3]. This feature transformed the community enormously in the ways in which it enables users to communicate and collaborate. This extra feature leads to Type 2 of value creation which allows users to interact with others in addition to being recognised. So far, the platform has more than 200 million daily users and 400 million monthly active users, with more than half of content creators and sharing their videos on the platform (Forbes, 2022).

In Type 2, Kwai app users actively engage in posting, selling, and buying products and services through a live online sale feature. Product range included thousands of units of daily products such as shampoo, toothpicks, and fruits being sold nationwide. During this process, the communication between app users normally includes negotiations of price, quantity, mode of transport, and mode of payment. For Type 2 app users, options to promote the products through paid advertisement channels are available in addition to conventional ‘word of mouth’ testimony written in the chat box during a live online sale to promote their page. For example, a positive testimony from a farmer would boost the sales of another farmer. Collaboration between sellers are reflected in Type 2 value creation and posting products on the app allows them to be watched by potential customers or the wholesaler from outside the province. Customers particularly connect via commenting on the seller’s chatbox. “Demand of a product can be created when sellers conduct some joint live online sale. They can say, for example, I produced some good quality oranges, and you grow good quality apples, we can promote each other's products” [KwaiStaff_1]. This process highlights collaboration among grassroots entrepreneurs occurs without company intervention or further encouragement from the technology provider. The need to endorse each other comes naturally from the similar interest of followers both fruit sellers and it also shows how the platform is user-friendly.

During the interview, one farmer also demonstrates how the Kwai app provides an opportunity to access knowledge from fellow farmers in the app. This reflects the importance of technology towards information exchange and knowledge adoption that goes beyond the

traditional way of communicating knowledge which previously can only be assessed ‘face to face’. This is leading to Type 3 of value creation occurring in the digital platform which enables both (paid and free) teaching activity and online classrooms. At the Type 3 level, digital technology-based knowledge transfer is understood as the potential mechanism through which technology facilitates marginalised entrepreneurs and less-advantaged communities.

In this manner, attention and recognition are reflected in the number of followers their Kuaishou page or profile account. The important point here is that some online-based relationships (Type 1) can be transformed into buyer-seller relationships (Type 2). For example, Kuaishou has been able to help people living in less-developed regions such as Henan province to start a business. Interestingly grassroots entrepreneurship is significantly growing in this area, but this is also due to shared culture and similar dialect used by app users located in the northern part of China enabling them to better communicate. Kuaishou staff noted that “There are 700 million Kwai users who are mainly located in the northern and north-western part of China. I think it is because most people speak Mandarin. People in the south are speaking Cantonese, we are not very familiar with the dialect. Language is important although that is not the only deciding factor... but put it this way, it is easier to communicate with your friends or to encourage them to use the app if you speak a similar language.” [KwaiStaff_2]

While some of these seller groups link a small circle of local farmers or serve as a platform to coordinate a group of sellers (group of corn farmers - similar product) or group of fruit sellers, other groups have a distinct focus on certain products (a specific type of herbs hunted by consumers with health-related issues) which are not available on the local market. In the context of the role of digital technology, it shows how digital platforms facilitate different forms of value creation occurs within the app achieved through user interaction, buyer/seller exchanges, and network formation.

Another type is a large group of sellers across China (Type 4). In our study, we interviewed a user representative of the ‘fruit hunter’ group who are specialists in brokering the best quality of fruits in the season located in several provinces. Type 4 app users have the capability to search, evaluate, and create demand for each variety of rare fruits. They are also responsible to define pricing and arrange logistics including transport and warehouse. This type demonstrates how the app enables network formation between sellers in rural provinces who were previously locked out of the business opportunity prior to Kuaishou app. Thus, one participant stated, “Us fruit hunters don’t grow fruit ourselves but, in the spring or summer we’ll go to Henan (well known for rare and high-quality Apples) to search and buy bulks of those Apples, take a video, and upload them on the app”. The Type 4 model is benefiting both farmers as well as fruit-hunters who act as an agent or distributors. By selling through fruit-hunter farmers are benefited in two ways, they are exposed to a wider market outside the growing area without having to invest in developing the distribution channel. The implication of the brokerage business model has become a prominent element to help the growth of grassroots entrepreneurs.

Coordinating business activity through ‘fruit hunter’ is common for this type of agricultural production to reduce transaction costs as well as to increase market reach. The small market size and the lack of purchasing power are major issues for grassroots entrepreneurs. This issue makes them less attractive to profit-seeking firms who are accustomed to producing large-scale products and services with considerable margins. In addition, scale constraint is further complicated by the *chicken-and-egg problem* involved in the problem of

infrastructure and the availability of public services such as transportation and telecommunication providers.

5. The role of the MNE towards grassroots entrepreneurship

Reflecting on the empirical analysis discussed in this paper, we content that multinational provides two critical factors (1) the initial infrastructure of digital platform for the marginalised communities to engage in entrepreneurial activity, and (2) the continuous improvement of knowledge through the variety of features provided in the apps. A core constraint faced by the marginalised communities who live in the poverty was a lack of access to education and networks including access to capital and knowledge. Previous studies acknowledged that poverty is not merely economic difficulty or low earning levels, but it is fundamentally described as a lack of skills and capabilities that would help them break out of the grip of poverty (Moser, 1998; Seelos and Mair, 2005). Further, the lack of technical skills could become a barrier to knowledge adoption which implies that grassroots entrepreneurs are locked out of opportunity and placed in a disadvantaged position. Before the era of technology and the internet, it is difficult for most people who live outside the big cities to engage with online businesses leading to grassroots entrepreneurship. However, the entrepreneurial networks in China hold the continuation of a culture of commerce that has old historical roots since the country's economic liberalisation (Huang, 2008). The close interdependence existing between multinational including Kuaishou facilitated the integration between local entrepreneurs and the necessary conditions enabling the transition from marginalised communities to grassroots entrepreneurship.

As multinational, Kuaishou has been able to provide access to information as well as the network that is required for new entrepreneurs to grow by developing easy-to-use technology that contributes to community development and stimulates grassroots entrepreneurs. The method of collaborating and co-selling has overcome the problem of 'disconnection' previously argued by Heeks (2010). Without proactive indigenous efforts, technology embedded in the tangible product will remain attached to the product and unlikely to improve the capability of the users. It is evident that Kuaishou provides the opportunity for home-scale businesses to access nationwide online customers. Thus, "creating value for users is our main focus and we do it to the extreme. We make the whole video uploading easy to use, so that many people can use it. I would like one billion people to use our service" [KwaiStaff_5]. There is an important dynamic here in that being able to access technology means that app users, no matter they are located, will be able to engage and create value. Moreover, app users are realising their individual skills and capabilities in creating home-scale businesses. Thus, the app and payment feature enable individuals and small businesses to sell and promote products and services and it also allows users to create networks which otherwise impossible.

It is important to note that the formation of the entrepreneurial ecosystem also occurs over time within the multinational to leverage the experience of new entrepreneurs. *Social Impact Institute* established by Kuaishou leveraged the platform as a mechanism to increase the income of app users by offering social e-commerce education and resources to rural users. This initiative provides an opportunity for app users to learn an innovative practice of knowledge transfer which reflects the importance of training within digital technology companies towards capability enhancement (Lopez et al., 2007). Thus, "through the institute, our incubation program allows users (who are, for example, teachers) to set up a business using the short video app" (extracted from the discussion with Kwai 2019). *Social Impact Institute* helped rural entrepreneurs generate USD\$1,4 million in collective revenue last year

(Technode, 2019). There is an important role to the grassroots entrepreneur that MNE can play, particularly with app users, that provides a source of innovation and encourage them to evolve and exploit opportunities to serve nationwide markets.

In this study, we identified two types of value: value that translated into revenue or income through buying/selling products within the app, and then the value that is created and captured from learning activity. This is an important conceptual point highlighting that value accumulated by the app users increases the ability to engage in social activity in addition to the increase of self-confidence. It is through connecting app users with similar interests, value is captured. Four types of value creation identified demonstrate that capability is developed through technology and facilitates the marginalised communities to start a business.

Thus, sustainable development is a concept that is recognised by Kwai founder and CEO, Su Hua, “the short video platform enables users in rural areas to gain attention from the public by showcasing their lives and have a sense of recognition and pride in their own identity” (Chinadaily, 2019). Previous studies in electronic marketplaces primarily interested in business-to-business marketplaces that facilitate sourcing and procurement, this research presents an expanded perspective that includes the app users from marginalised communities as key actors. Marginalised communities were traditionally considered to have low purchasing power and minimum production and consumption behaviour due to a lack of capital and infrastructure. While the identified element of constraint faced by the marginalised communities are consistent with prior literature, the mixed method approach allowed the integrating multi-perspective into the analysis. For instance, technology adoption is no longer a barrier faced by the marginalised community. The digital company has overcome the challenges of illiteracy, insufficient infrastructure, and lack of capital and access to media (television and magazine) by continuously developing easy-to-use technology.

It is critical to understand the process of social value creation (Mizik and Jacobson, 2003; Santos, 2012). Identifying the importance of individual self-confidence and the need to form an online support group allows for a better understanding of value creation that has little to do with profits but instead involves the fulfilment of basic and long-standing needs such as confidence building and self-awareness. This finding suggests that filming day-to-day working life, showing the ability to dance, or giving cooking lessons are equally important as making money. App users may earn extra income and have thousands of loyal followers that are perceived as ‘friends’ by users which distinguishes Kuaishou from many short videos and live streaming platforms. Recognising that digital platform offers social and emotional value (Type 1) help understand Kwai is largely authentic and app users can express themselves. By being able to express their true self, marginalised communities can achieve a great sense of happiness as well as monetize their skills and ability (Type 2). This implies that marginalised communities have been able to overcome entry barriers and develop market knowledge through utilising the digital technology platform. Collaboration between app users and their followers reflects reputation and commitment. Further, being embedded in a network relationship (Type 3 and 4) provided app users the necessary support to become grassroots entrepreneurs. It is noteworthy that combining reputation and resources with other sellers increases the opportunity to sell large-scale products through the combined account.

Until a decade ago, innovation often was associated with ground-breaking discoveries because of costly, risky, and lengthy processes that require intense knowledge and capital investment to create something “new” (Zanello *et al.*, 2016). Later studies, however, recognised the importance of adoption and adaptation as two major concepts that are

significant for firm development in low-income communities. This is linked to the definition of innovation as "[...] *the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations*" (OECD, 2005; 46). App users will be engaged in a variety of activities within the app, but it may or may not lead to grassroots entrepreneurship. A key thing is to highlight the types of value creations that enable app users, who were previously excluded, to fulfil the need to socialise. We thus highlighted the four types of engagement within the app that allows a new way to co-produce/co-sell for grassroots entrepreneurs.

Social embeddedness plays a central role in the value creation in the digital platform and has transformed the behaviour of the local grassroots entrepreneurs. In the digital marketplace, it is important to roll out more data services to marginalised communities and "if you are developing social network platform to focus on the rural areas, the important thing to do is to help rural producers to have their stuff delivered to centres" (Comments from UNCTAD representative, 2019). There is also a need to make a project more sustainable and this is where the private sector plays an important role. In the digital space, they are controlling most of the resources i.e., the internet, the network, the broadband, and the connectivity. This is particularly relevant in the context of grassroots entrepreneurship where the major source of learning is the activities among app users.

CONCLUSION

We argue that research on entrepreneurship should seek to investigate issues that include grassroots entrepreneurs including those living in poverty and marginalised. Currently, there is a significant shortage of empirical research regarding the involvement of marginalised communities living in poverty. To address the above issue, we also investigate the role of the digital technology platform in particularly micro or small-scale businesses. In doing so, we conduct a study of Kuaishou app users in China, where we identified three types of relationships that transform the benefits of technology into income creation for grassroots entrepreneurs. Our study demonstrates how digital technology platforms can be used to transform the ways in which different values are created.

The benefit of the digital technology-based business model includes providing rural communities with an opportunity to grow their business including helping marginalised communities to gain confidence and exploit business opportunities, providing access to local resources, the ability to network, and anticipating and avoiding risks that might disadvantage entrepreneurs. Our findings also suggest that digital technology provides better access to market information and improved communication among social networks. However, the most significant benefit for the marginalised communities is the potential for increased job creation followed by the development of new products and services. Our proposed framework assumes that, with its potential to exchange information and communication, digital technology can provide an opportunity and capability enhancement for small businesses. We also argue that collective initiative from grassroots entrepreneurs plays an important role in capability enhancement, leading to different forms of value creation. Our study makes three important contributions to the existing literature on entrepreneurship and the development dimensions of digital technology. Firstly, the paper lends empirical evidence to the conceptual literature examining entrepreneurship in the context of *the base of the pyramid*. The majority of the literature on digital technology and entrepreneurship has focused on highflyers such as start-up technology companies located in advanced economies. There is very limited evidence on how digital technology impact micro-businesses in

underrepresented communities. Second, by choosing a qualitative study this paper provides a detailed analysis of cases that capture the complexity and dynamics of relationships between individuals and their environment. Third, only a handful of studies empirically examined the drivers of entrepreneurship for the case of small businesses – in our case, grassroots entrepreneurship where we consider different factors that have become the drivers of entrepreneurial activity leading to value creation, including the non-monetary elements of self-recognition and confidence.

Examining the wider impact of the digital technology-based business model on marginalised communities remains a key area for future research. This includes how multinationals, governments, and other stakeholders can collaborate better to improve the likelihood of small businesses. More importantly, this may provide novel insights into whether digital technology-based entrepreneurship will contribute to inclusive development.

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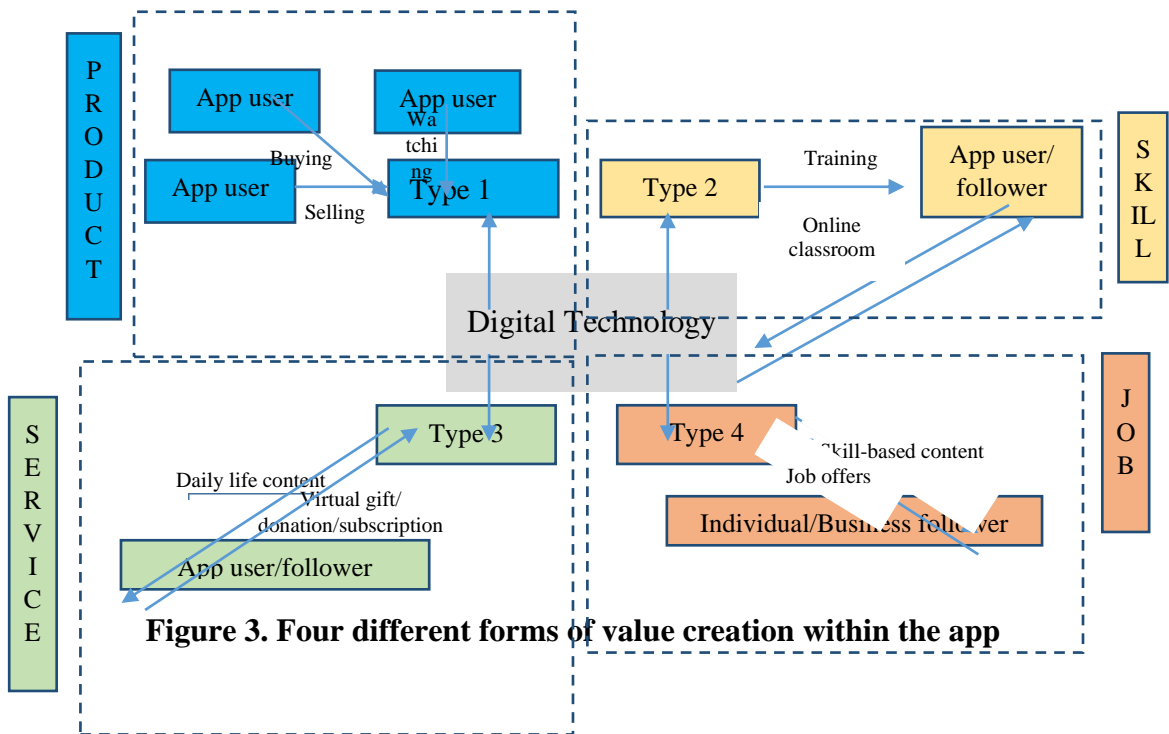
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APPENDIX 1

Profile of interview participants

Identifier	Job title	Department	Location
KwaiStaff_1	Member of staff	Department of Marketing	Headquarter Office
KwaiStaff_2	Member of staff	Department of Marketing	Headquarter Office
KwaiStaff_3	Director	Corporate Social Dept.	Headquarter Office
KwaiStaff_4	Senior Vice President	Department of Marketing	Headquarter Office
KwaiUser_1	Farmers	Local participant	Shanxi
KwaiUser_2	Construction worker	Local participant	Hangzhou
KwaiUser_3	Fruit hunter	Local participant	Hunan
KwaiUser_4	Kindergarten teacher	Local participant	Wuhan
PolicyMaker_1	Chief of ICT	UNCTAD	Geneva
PolicyMaker_2	Ex-managing Director	Microsoft	Bangladesh
PolicyMaker_3	Regional Director	CBBC	London
PolicyMaker_4	Representative officer	CASTED	China