

Digitalization and Social Innovation in Rural Areas: A Case Study from Indonesia*

Fikri Zul Fahmi 

*School of Architecture, Planning and Policy Development
Institut Teknologi Bandung*

Anandhika Arifianto

*School of Architecture, Planning and Policy Development
Institut Teknologi Bandung*

ABSTRACT This paper aims to identify how rural digitalization influences social innovation in the context of the Global South. Using qualitative research methods, we examine two cases of digitalization in rural areas in Indonesia, which represent differing types of digital technologies and economic activities. Our findings show that the use of digital technologies in livelihood strategies stimulates new social and institutional practices in rural areas. As digital technologies that are adopted differ in both cases, the complexity of adoption and the digital literacy and skills required also vary. Such a complexity generates challenges and hardships for the community, but at the same time, it provides room for expedited learning and urges them to fight the challenges collectively. This nurtures reflexivity between agents and stimulates the legitimation of new practices regarding the adoption of digital technologies and their ability to solve social problems. Cultural values clearly play an essential role in this process. Openness and courage to change facilitate agents to build legitimacy, whereas strong cultural values tend to maintain existing practices in a community.

Introduction

Rural transformation in the Global South has been characterized by a decrease in labor in farming, an economic structural shift from agricultural to non-agricultural sectors, diversifying livelihood strategies, increased spatial and social mobility, and the development of infrastructure and strengthened rural–urban linkages (see Belton and Filipiski 2019; Berdegué, Rosada, and Bebbington 2014; Diao, Magalhaes, and Silver 2019; Rigg 2001; 2007). Globalization has bolstered the relationships between the global economy and the local outcomes, in that the farming activities are adjusted to the global demands and the peasant farms are replaced by agro-industrial and other types of enterprises (Rigg 2001). This transformation indeed generates challenges for rural communities, in that they need to adapt to ongoing changes and find new ways to increase incomes. Although rural transformation has been

*The authors are grateful for the funding assistance from Program Penelitian Luar Negeri/World Class University Program, Institut Teknologi Bandung. Address correspondence to Fikri Zul Fahmi, Jalan Ganesha 10 Bandung 40132 Indonesia. Email: f.z.fahmi@itb.ac.id

very dynamic, rural areas in the Global South have long been typified by persistent problems, such as poverty, vulnerability, landlessness, and limited access to resources and facilities (Rigg 2020; Trivelli and Berdegue 2019). Rural communities must therefore innovate to come up with better solutions to such challenges (Bock 2012; Bosworth et al. 2016; Noack and Federwisch 2020). In this regard, social innovation is seen as one of the means by which rural communities collectively cope with challenges (see Martens, Wolff, and Hanisch 2020; Neumeier 2012; Noack and Federwisch 2020).

There is increasing interest in the role of social innovation in rural development, which is often seen both as a desired outcome and an instrument to solve the problems faced by rural communities (Bock 2012). Social innovation refers to new activities and ideas that are motivated by the wish to achieve social needs and goals (Mulgan 2006). As a new social practice, it reflects coordinated actions undertaken collectively by social agents aiming at creating social change (Cajaiba-Santana 2014). In the process, the agents seek to build legitimacy that enables them to perform collective action and solve social problems (Cajaiba-Santana 2014). A strong sense of collectivity, thus, plays an essential role (Cajaiba-Santana 2014; Mulgan 2006).

The advance of digital technologies in rural areas, as manifested either in digital artifacts, platforms, or infrastructure (see Nambisan 2017), creates both opportunities and challenges for solving problems faced by communities. Digitalization—by which we mean the use of digital technologies and the Internet—helps improve accessibility and connectivity in the absence of sufficient physical infrastructure (e.g., Malecki 2003; Velaga et al. 2012). Digital infrastructure connects societies across regions and helps them access public services, which in turn drives policy reforms and institutional innovation (IFAD 2016). Digitalization also facilitates technological innovation, which changes how enterprises operate and labor perform their activities. On the other hand, the low penetration of digital technology and low digital literacies in rural areas, including the issue of the “digital divide” (the gap between urban and rural areas in terms of access to information and communication technologies [ICT]), complicate the opportunities that digitalization offers (Bukht and Heeks 2017; Malecki 2003; Saleminck, Strijker, and Bosworth 2017).

Along with these issues, an important question emerges: to what extent does digitalization play a role in rural social innovation, and how? There is little research explicitly addressing this issue, even though it is an important question for rural development, particularly in the Global South. The literature documents increasing attention to

“digital social innovation” (e.g., Zerrer and Sept 2020). Digitalization is presented as having the potential to support, enable, or transform social innovation (Millard and Carpenter 2014). However, this premise might be problematic for the context of the Global South. The issue of the digital divide, as explained before, is even more complex (Mariscal 2005). In several contexts, the low adoption of digital technologies in rural areas might not only be caused by low digital literacies and skills. Digitalization and the Internet can sometimes be rejected due to cultural barriers, as they are seen as contradictory to local social values (e.g., Tremblay 2018). It is generally understood that digital development in rural areas not only offers new opportunities but also generates additional challenges and impacts that need to be anticipated (Malecki 2003; Velaga et al. 2012). It is, thus, important to understand how specific socio-cultural characteristics of rural communities in the Global South influence the way digitalization facilitates, or even obstructs, their collective learning.

This paper aims to examine how digitalization stimulates social innovation in rural areas in Indonesia, a country in the Global South. Indonesia was chosen because it is an example of a country where significant challenges are being faced due to rural transformation that is strongly influenced by extensive urbanization and digitalization (see Fahmi and Sari 2020; Firman 2017). We examine two villages that represent differing scopes of digital economies and types of economic activities, namely Kamasan village in Bali, in which digitalization is implemented through government programs in traditional crafts, and Kaliabu, an agricultural village in Central Java, which has experienced economic diversification due to the presence of logo designers. This paper contributes to the literature on rural social innovation and rural digitalization by providing empirical evidence regarding the Global South, which is still rarely discussed. This paper provides insights into how different levels of complexity of digitalization in rural economies influence social innovation processes. We eventually show that bottom-up initiatives, triggered by the need to adapt to digitalization’s challenges, stimulate social learning and collaboration among rural community members, whereas top-down efforts in promoting digitalization could not directly nurture such a new practice.

The remainder of this paper is structured as follows: The next section presents a literature review on rural transformation and digitalization and a conceptual framework for analyzing the effects of digitalization on rural social innovation. A brief description of our methodology is then presented, followed by the overview of cases and the results of our analysis. We then conclude the paper by remarking on our findings.

Digitalization and Rural Transformation in the Global South

Rural transformation can be described as a comprehensive process of change at the societal level, driven by economic diversification and a shift from agricultural to non-agricultural sectors (Berdegué et al. 2014; Rigg 2001). The terms “deagrarianization” and “agrarian transition” explain this structural change, which is reflected by a decreased proportion of labor in farming, intensification of agricultural diversification, the structure of the economy shifting from agricultural to non-agricultural sectors, larger occupational plurality, intensified spatial and social mobility, larger dependence on market relations, and rising rural–urban interpenetration (Bryceson 1996; Rigg 2001). Rural communities clearly need to adapt to these developments, which will in turn trigger further socio-cultural changes. In the Global South, rural transformation is strongly associated with urbanization, in that economic forces from urban areas stimulate changes in agricultural activities and land markets in surrounding areas (see Diao and Magalhaes 2019; Rigg 2001). As urban–rural connectivity strengthens, features of the urban environment are introduced to rural areas, and this influences the livelihood and standard of living of rural communities (Ohlan 2016).

Digitalization potentially contributes to the progression of rural transformation (see Fahmi and Sari 2020). Digitalization is a prominent form of modernity that influences rural societies alongside other technologies. As Staab (2017:2–3) contends, digitalization “represents a broader capitalist transformation” and “a macro-strategy for economic transformation” which focuses on “rationalization strategies” for creating a new surplus of consumption. Nambisan (2017:3–4) describes that digital technologies in the economy can manifest in three distinct but related elements: digital artifacts (components, applications or media contents that can be used by end-users), digital platforms (“a shared, common set of services and architecture that serves to host complimentary offerings”), and digital infrastructure (tools and systems that “offer communication, collaboration and/or computing capabilities”). In general, the areas of digital economy that are present in rural areas can be placed into three categories: the “core” digital sector (e.g., hardware and software, IT consulting), the “narrow” scope or digital economy (e.g., digital services), and the “broad” scope of the digitalized economy (e.g., e-commerce, e-business, precision agriculture) (see Bukht and Heeks 2017). In many contexts, the presence of the core digital sector in rural areas is limited in comparison to the broader digitalized economy, such as e-commerce.

Digitalization drives various changes in rural areas, particularly in the delivery of services (Moseley and Owen 2008). This is possible as digitalization accelerates the “diffusion of networking logic,” which

modifies the social morphology of societies as well as the process and outcome of “production, experience, power and culture” (see Castells 2010:500). Digitalization and information technologies provide access to new resources and opportunities and alter the movement of people and resources between urban and rural areas (Demos 2005). Digital technologies facilitate intra-business, business interactions, teleworking, and home-working (Bell and Jayne 2010; Moseley and Owen 2008). These developments considerably stimulate entrepreneurial practices in rural areas in the agricultural and nonagricultural sectors (Bowen and Morris 2019). Many knowledge-based economic activities that flourish in urban areas, such as creative industries, are made possible in rural areas due to digital developments (Sorensen 2009). While digitalization appears to open up new opportunities, it also creates challenges and struggles for rural communities and businesses. It is to be expected that digital technologies are only useful for those who have the ability to use them (Malecki 2003; Räsänen and Tuovinen 2020; Saleminck and Strijker 2017). For those with low digital literacy and little knowledge regarding these technologies, digitalization may pose further problems that add to those rural communities have faced for decades (see Rigg 2001). These conditions suggest that the role of digitalization in rural areas is contested, particularly in the Global South.

A Conceptual Framework for Analyzing Rural Digitalization and Social Innovation

Social innovation is progressively regarded as a means as well as an end in overcoming the problems faced by rural communities (Bock 2012; Martens and Wolff 2020). Previous studies have provided comprehensive overviews of conceptual arguments regarding the term “social innovation.” Despite the critique that it is often used as a buzzword and not always clearly defined, social innovation is generally understood as new ideas and practices that are triggered by the need to achieve social goals (e.g., Bock 2012; Cajaiba-Santana 2014; Grimm et al. 2013; Mulgan 2006; Pol and Ville 2009). Specifically, social innovation reflects planned and legitimated actions ventured collectively by social agents attempting at social change that emerges as new social practices (Cajaiba-Santana 2014). In this view, legitimation is an important process in which collective action can come into play (Cajaiba-Santana 2014). Nevertheless, some scholars regard social innovation does not have “inherent goodness,” in that it does not automatically deliver positive impacts and, in some cases, may rather affect negatively to some actors (e.g., Christmann 2020; Howaldt, Kopp, and Michael 2015; Lindhult 2008:44). Manzini (2014) reviews the types of social innovation, including “incremental

innovation,” in which the changes lie within the range of existing ways, as well as “radical innovation,” which lie outside the range. Social innovation is also classified in terms of its initiatives, in which the changes start from experts, decision makers or political activists (top-down) or rather from people or communities (bottom-up) (Manzini 2014:57).

Previous studies have outlined important aspects that stimulate social innovation, including the importance of creativity (i.e., the creative class), cultural capital and values, social capital, and collective action in rural social innovation (e.g., André, Abreu, and Carmo 2013; Chowdhury 2020; Fudemma, De Castro, and Brondizio 2020; Naranjo-Valencia, Ocampo-Wilches, and Trujillo-Henao 2020; Neumeier 2012; Roberts and Townsend 2016). In regard to the rising importance of digital technologies in rural areas, it is now imperative to look into the role of “digital capital”; that is, the resources and benefits that can be used by communities, including digital infrastructure, tools, literacy, and skills (Roberts and Townsend 2016).

Although the relationship between digitalization and rural social innovation has been examined in previous studies on “digital social innovation” (e.g., Millard and Carpenter 2014; Zerrer and Sept 2020), it is important to examine the topic in more depth. Doing so allows us a more comprehensive picture of the social and institutional mechanisms and relationships that support it. Unlike Schumpeterian or technical innovation, which is focused on creating new value and economic growth (Sengupta 2014), social innovation aims at solving social problems (see Bosworth et al. 2016; Christmann 2020). There are two main perspectives for analyzing social innovation: (1) the agentic-centered perspective, an individualist and behavioral approach that focuses on the actions undertaken by specific individuals to stimulate social innovation and (2) the structuralist perspective, which focuses on the external structural context of social innovation (Cajaiba-Santana 2014).

Cajaiba-Santana (2014) combines both perspectives using neo-institutional theory and structuration theory, creating a comprehensive framework through which to study social innovation mechanisms. Institutional theory provides an overview of the relationship between institutions (norms, rules, conventions, and values) and structures of society (Cajaiba-Santana 2014; Hollingsworth 2000). This theory states that institutions play a role in creating new ideas from social systems, and offers various theoretical insights into new practices that are formed through legitimacy and diffusion. From an institutional view, social innovation is seen as “a result of the exchanges of knowledge and resources by actors mobilized through legitimization activities” (Cajaiba-Santana 2014:8). Meanwhile, structuration theory considers the relationship

between institutions and configuring actors in the process of creating social systems. The social system discussed in structuration theory is a model governed by social practice and the relationships between agents. Structuration theory focuses on the reciprocal interactions between agents and social structures (Cajaiba-Santana 2014; Giddens 1979). As to structuration theory, social innovation is “socially constructed” in that “individuals engage collectively in purposeful actions and reflexively monitor the outcome of their actions” (Cajaiba-Santana 2014:8).

The framework offered by Cajaiba-Santana (2014) is suitable for explaining the social and institutional mechanisms through which digitalization influences rural social innovation, in that it covers the actions of agents and structural features of society. It also considers the relationship of institutions to the drivers of social innovation, which in this context are related to digitalization. In so doing, analysis can be carried out on three different levels: intra-group social innovation, inter-group social innovation, and extra-group social innovation, or the macro-level of social systems (Cajaiba-Santana 2014). In the following section, we draw upon this framework for analyzing in-depth the agency stimulating rural digitalization, institutional practices, and the social changes that occur as a result (see Figure 1).

Agent, Agency, and Reflexivity in Rural Digitalization

Although institutional theory focuses on norms, rules, conventions, and values (institutions) that guide individuals (“agents”) and collective actions (Cajaiba-Santana 2014; Hollingsworth 2000), structuration theory looks to “agency” to explain how institutions and actions configure

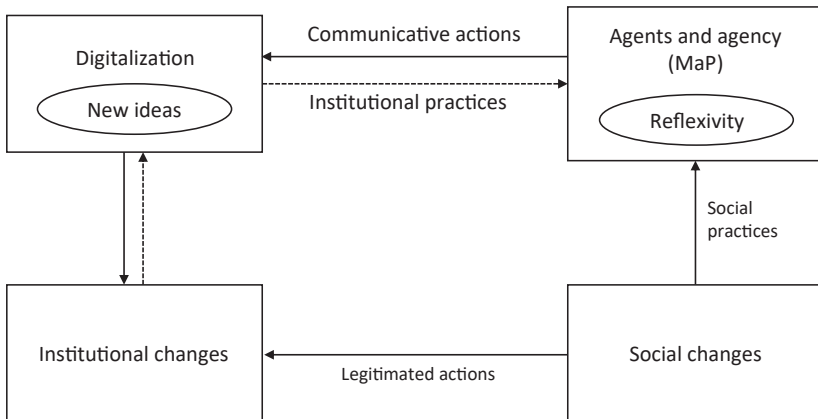


Figure 1. Conceptual Framework. Source: Based on Cajaiba-Santana (2014).

each other to create social systems (Cajaiba-Santana 2014; Giddens 1979). In combining the two theories, Cajaiba-Santana (2014) suggests examining how an agent is both constrained and enabled by structures or institutions when re-creating social systems. The notion of reflexivity is used to characterize the process of social innovation as communicative action, in that it is used to achieve mutual understanding among interacting individuals, aiding them in coordinating their actions based on collective interpretations of the social context (Cajaiba-Santana 2014). Reflexivity constitutes the agent's cognitive ability; it also shows that agents have a critical attitude towards the social order (Czyzewski 1994). In this paper, reflexivity is related to the reflexive ability of agents regarding their actions towards other agents.

Identifying “heroes,” or agents, that promote digitalization in rural social innovation processes is important. Digital inclusion is a major issue in rural digital development, in that adoption of ICT has never been equal: there are early adopters and laggards, and there are various factors and mechanisms explaining this condition (Mariën and Prodnik 2014; Rogers 2003; Saleminck et al. 2017). In the Global South, in particular, this issue should be taken into account due to low levels of penetration of digital technology and digital skills (Bukht and Heeks 2017). According to International Telecommunication Union [ITU] (2020), only 28 percent rural households in developing countries had access to the Internet in 2019, a very low proportion as compared to developed countries (81 percent).

Nevertheless, agents play a role in “social change movements”; resources are mobilized and disseminated in collective action through relationships between agents, institutional structures, and social systems (Cajaiba-Santana 2014). As such, it is important to look into how the use and adoption of digital technologies are promoted among agents and rural communities, as well as how this influences collective action to solve social problems. It is to be expected that agents use digital technology to solve existing problems, and this requires reflexive processes. A multi-actor perspective (MaP) can be used to identify agents, their relationships, and their levels of reflexivity. This also helps identify categories of actors and their levels of aggregation (Avelino and Wittmayer 2016). Actor categories comprise state (public agencies), market (private firms), community (households, families), and the so-called third sector (voluntary/nonprofit organizations that are not classified in the previous categories) (Avelino and Wittmayer 2016). These actors have different levels of aggregation: sectors, organizational actors, and individual actors (Avelino and Wittmayer 2016). We argue that using this categorization and aggregation will help determine the magnitude of

the strength of “social energy”, that is, the power of agents in carrying out movements for change and community empowerment, as well as shifting power towards other agents (Faucher 2010). We can expect that the stronger the motivation to participate is, the higher the level of commitment and intention to be involved in collective action is (Meerstra-de Haan et al. 2020). Both top-down and bottom-up initiatives can stimulate rural social innovation, although some believe that top-down initiatives are less effective at stimulating innovative practices among rural communities (Martens et al. 2020; Neumeier 2017). Agents in the third sector, such as activists, tend to have the ability to stimulate changes in a bottom-up way, often as a reaction to the failure of the government to provide social services to the community (Mulgan 2006). The level of aggregation of agents also affects the amount of social energy and has implications for collective action, as social energy is able to drive human networks (organizations) (Faucher 2010).

Institutional Practices and Legitimation

Following our discussion above, institutional theory explains how agents are constrained and encouraged by structures and institutions when recreating social systems (Cajaiba-Santana 2014; Giddens 1979). According to Castells (2010:502), digitalization reshapes networks within society and this enables “endless deconstruction and reconstruction” of culture and “dramatic reorganization of power relationships.” Social innovation as a new social movement reflects social energy which emerges collectively and encourages groups to act in pursuit of desired goals (Dunfey 2019; Faucher 2010). It is important to note that social innovation processes require agents to gain legitimacy to realize collective goals. Legitimacy is a form of collective appreciation of rational effectiveness, legal mandate, and collective value (Kingston and Caballero 2009). From an institutional point of view, legitimacy has the potential to create communicative collective action by giving validity to actions that change social systems and create new social practices. Without legitimacy, it is difficult to attract other people to participate because legitimacy creates the idea that new social practices deserve to be imitated and institutionalized (Cajaiba-Santana 2014). In other words, social innovation is impossible without legitimacy. Social innovation is as a new social practice that is trying to be institutionalized (Greve and Argote 2015). Social innovation proposes that new social practices are thus legitimate and purposeful.

With regard to our objective—explaining how rural digitalization affects social innovation—understanding this institutional legitimacy process is essential. The categorization and aggregation of actors are important, as they affect the strength of social energy available for

legitimation processes (Faucher 2010). We will also look into how various circumstances of rural contexts and the scope of digital economies influence building legitimacy.

Social Change

Social innovation is expected to generate societal changes by means of improved conditions, despite the negative impacts that potentially arise (Christmann 2020). As explained, social innovations reflect legitimated, collective actions by social agents (Cajaiba-Santana 2014). Such collective action includes social institutions, which also are regulators of agents' actions (North 1990). Legitimation is needed to create social change in society and fulfill common goals (Castro-Arce and Vanclay 2020; Howaldt et al. 2015; Nicholls, Simon, and Gabriel 2015; Westley and Antadze 2010). Previous studies have shown rural digitalization has significant societal implications. The presence of digital technologies and the Internet in rural areas place existing social values at stake, which necessarily stimulates changes in living patterns (e.g., Tremblay 2018). It is thus important to explore the further implications of legitimizing digitalization and new social practices, particularly for social norms and values, as well as the role of social control, hierarchy and power in the process (see Castells 2010).

In summary, our framework draws on Cajaiba-Santana's (2014) conceptualization of social innovation, which explains how new ideas nurture institutional and social changes as agents are reflexively involved in legitimation processes in solving social problems. In this study, we look into how new ideas that emerge from digitalization are processed by the (reflexivity of) agents as well as how they engage collectively in legitimation processes. As such, we can identify the changes in institutional practices and social systems as a result (see Figure 1).

Methodology

Research Design

This study uses a double case study approach using qualitative research methods. Two villages were chosen to reflect different conditions and scopes of digital economies and different types of main economic activities in rural areas. Our analysis is performed at the level of intra-social group, in which we look into how agents in/outside the village brought new ideas from digitalization and how this affects norms, values, and rules of a social group, that is, the village community. The first case is Kaliabu village in Magelang District, Central Java Province. Here we can note the emergence of digital-based logo designers (digital service/narrow

scope of digital economies) in agricultural rural areas that encourage bottom-up social innovation. Meanwhile, Kamasan Village in Klungkung District, Bali Province demonstrates the use of digital/social media in non-agricultural rural areas as motivated by a top-down intervention that nurtures social changes in traditional craft industries. Comparison helps us to explore how different scopes of digital economies and digitalization initiatives influence social innovation processes and outcomes. By placing these two cases side by side, we can compare and validate potentially contrasting results and build conceptual arguments regarding this issue (Yin 2014). In doing so, a qualitative data analysis method is suitable since it provides descriptive explanations of the cases, allowing us to explore them with specificity and depth (Dey 1993).

Data Collection

In-depth, semi-structured interviews were conducted with local community members throughout 2019–2020 (before COVID-19 restrictions were implemented), to develop an understanding of the processes and outcomes of social innovation in the two villages. During the fieldwork we also had the opportunity to conduct observations regarding rural socioeconomic conditions, social interactions and digital infrastructure in the villages. This approach was appropriate considering our need to develop reliable conclusions on the relationship between digitalization and social innovation as well as the role of agents in the processes (Dey 1993; Miles, Huberman, and Saldaña 2014). During the interviews, important issues were discussed, especially the historical development of rural economies, the use of technology among rural communities, government programs and policies, and digitalization's influence on social conditions. In this way, we were able to identify the roles of agents in digitalization and their potential to change institutional and social systems. The informants for this study were determined by purposive and snowball sampling methods. The key informants in the interviews were determined through several selection criteria focusing on knowledge of the adoption process of digital technology and the institutional changes that arise from it. Operationally, we started with local leaders and government officials, who provided general overviews about the socioeconomic transformation in the villages and recommended follow-up interviews (snowballing) with local community members (including associations). In total there were 11 key informants in Kamasan, consisting of 8 craft-businessmen (wayang paintings, goldsmiths, and woven fabrics), one village government official, and two provincial government officials. For Kaliabu there were seven key informants, consisting of one village government official and six logo designers (including association leaders).

Qualitative Data Analysis

Qualitative data obtained from interviews were then analyzed using an interactive model, consisting of data reduction, data display, and interpretation and validation (Miles and Huberman 2014). After the interviews were transcribed verbatim, data reduction was carried out in three stages: open coding (first cycle), axial coding (second cycle), and selective coding (third cycle). In the first cycle, the raw data were simplified to highlight and obtain the specific meaning of quotes using labels. In the axial coding process, the open codes were grouped based on similar characteristics, which were then classified further in themes of analyses (selective coding). This coding procedure is an iterative and inductive process, in that although we developed a conceptual framework for analysis, we sought to find specific meanings and findings which both align with and contest previous conceptual arguments. To further process these results, we organized data into matrices and tables and validated our conclusions by examining and comparing findings within cases (triangulation between key informants) and between cases (see Miles et al. 2014). The analysis was done in Indonesian to ensure the accuracy of meaning and interpretation, and we translated necessary quotes to be presented in this paper. To keep the confidentiality of our informants, their names are presented anonymously in this paper.

Overview of Cases

The Kaliabu Case

Kaliabu Village, located in Magelang District, Central Java (about 501 km from the national capital Jakarta, see Figure 2), was an agricultural village that has transformed into a “logo design village” (see Fahmi and Sari 2020). Kaliabu is famous for logo designers, an innovation that was led by several young individuals. They saw an opportunity for a new livelihood and tried to develop their skills in graphic design on their own through video tutorials on the Internet. They did not have any previous knowledge regarding the use of digital technology in logo design production. In 2011–2012, some of the individuals participated in an international logo design competition and won the prize. This inspired the surrounding community to try logo designing, as it offered the possibility of dramatically increasing their incomes. The development of logo designers in Kaliabu then spurred an economic boost for the village community that started to tackle problems of poverty and unemployment especially during 2013–2014.

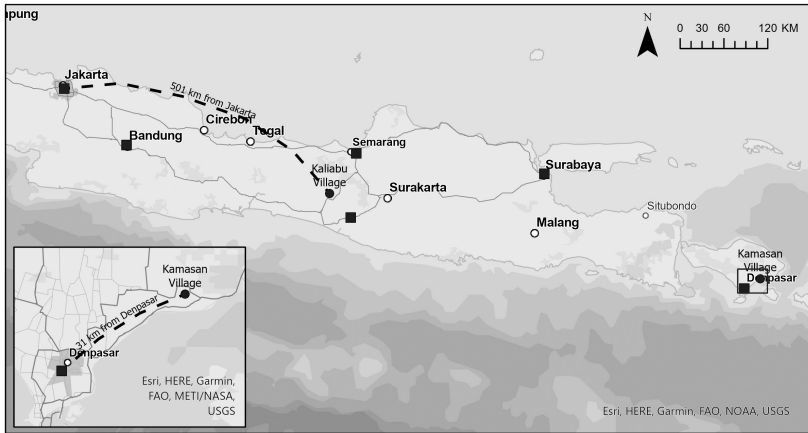


Figure 2. Locations of the Cases.

The emergence of logo designers in this village not only created new jobs but also facilitated new practices that can be understood as social innovation, including the building of public facilities and the practice of sharing economies. The community of logo designers (e.g., Rewo-Rewo, SDC, SITKOM) also organized charity events and contributed to their community’s material environment by building a mosque and schools. The pioneers of logo design established a forum that facilitated the sharing of knowledge, digital technology skills, and design software, which to a certain degree responded the problem of low digital literacy and skills. This forum generated a community business model (sharing economy) that created a mechanism whereby demands from international customers could be responded to by members of the forum. As such, this development increased solidarity among local designers and facilitated social interaction among wider community members. On the other side, some village residents were concerned with the shift social values, for instance, a decreasing sense of togetherness and disrespect for parents.

It is also important to note the fluctuated nature of logo design activities since 2014. Amidst global competitions, it has not been easy for these logo designers to survive in the design markets. Although many of them have quit the activities and moved on to other jobs, it is clear that as they were exposed to digital technology and the Internet, they obtained knowledge and abilities to work outside agriculture and logo design (see Fahmi and Sari 2020).

The Kamasan Case

Kamasan Village is located in Klungkung District, Bali (about 1,208 km from Jakarta and 31 km from the provincial capital of Denpasar, see [Figure 2](#)). Most of the households in the village have craft businesses which in general did not use digital technologies. The development of traditional craft industries in Kamasan cannot be separated from the past history of the Klungkung Kingdom. Kamasan is an administrative part of the Gelgel indigenous village, whose craft development is inseparable from the development of *pande* (craftsmen) based in Gelgel. The types of creative cultural products in Kamasan Village are very diverse, including gold and silver handicrafts, Kamasan puppet painting, *Uang Kepeng*, carving cartridges, and woven fabrics. Of the various types of crafts that have developed in Kamasan, the majority are used for religious purposes. In general, these religious craft businesses prefer not to use digital technologies, as their consumers tend to be local and specific.

The promotion of digital technologies in traditional craft businesses in Kamasan reflects a top-down initiative by the Bali provincial government since 2016, implemented with the aim that local businesses and community members would transform their business and social practices to be more innovative. Nevertheless, the government seldom consulted with local businesses and communities about what they need and prefer. Digital technologies, especially the Internet and social media marketing, are used by cultural businesses in woven fabrics, wayang paintings, and *Uang Kepeng*, as their products can be sold widely and are not only produced for religious purposes. The use of social media marketing was promoted by the local government and taken up by local business actors, as they felt it appropriate to expand their market and maintain the continuity of their businesses. Among those who use the Internet, many also use it for design and production processes. The use of digital technology in some of the local businesses facilitated improvements in their businesses, particularly by opening up new market opportunities. Children of craft businessmen used digital technology to edit photos and some of them used it to design clothes using wayang motifs. However, this process tends to occur individually within the crafter's family. The benefits and challenges arising from the adoption of digital technologies were not intensively communicated among local crafters and used to strengthen their collaborations.

Results

This section presents the results of analyses on the three aspects: agents, agency and reflexivity; institutional and legitimacy processes; and social changes with regard to rural digitalization.

Agent, Agency, and Reflexivity

We identified the agents of digitalization using a multi-actor perspective. In general, there are differences in the categorization and aggregation of agents in Kaliabu and Kamasan, and this influences reflexivity and the amount of social energy invested in the adoption of digital technologies.

Each category of actor is present in both cases, including the government, the community, the market, and the “third” sector (see Figure 3). In Kaliabu, community members played a more significant role compared with the government and market, who provided assistance in digital technologies and infrastructure later. The emergence of logo design in this village was a bottom-up initiative: some agents in the community category entered into the third sector, becoming activists who initiated the logo design profession, formed forums/associations of logo designers, and persuaded young people in the village to join in their activities. These 12 agents tried to initiate logo design and later mobilized local resources in processes of digitalization. As an interviewee explained, the development of logo design in Kaliabu used information on emerging trends gathered from the Internet in 2011:

Mr. NIM did not have a computer, so he came to Mr. WD’s place [where] I and Mr. AKB also learnt together. [We thought that]

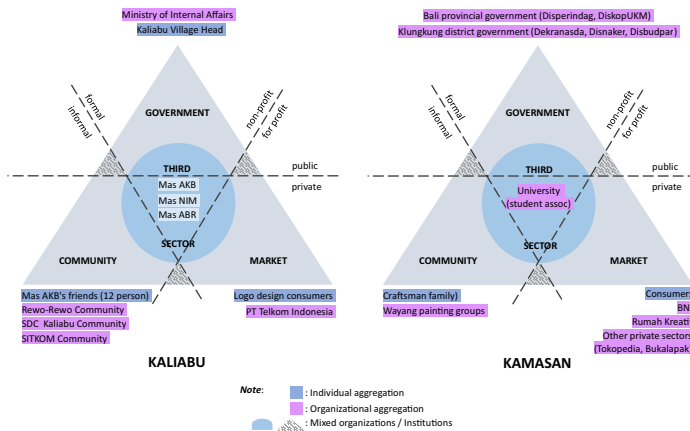


Figure 3. Digitalization Agents in Kaliabu and Kamasan (Using a Multi-Actor Perspective). [Colour figure can be viewed at wileyonlinelibrary.com]

this kind of information [or knowledge and skills about logo design] should be disseminated. For me ... since I was younger, my house has often been used as a place for friends to play, confide in and tell stories. So, I invited other friends who did not have jobs to be trained and coached, 12 people [in this logo design]. (Interviewee AKB, male, 28 years old, a logo designer for six years)

People who saw their significant increase in income tried to follow in their footsteps. Along with the increasing number of people interested in logo design, some forums/associations emerged (locally called “*komunitas*”), such as Rewo-Rewo, SDC Kaliabu, and SITKOM (see [Figure 3](#)). These associations grew from 2011 to 2013, as many people in Kaliabu Village changed their professions to become logo designers; they actually called themselves “logo crafters” (*pengrajin logo*) instead, as they did not have formal education in graphic design. These associations bolstered networks among logo designers by sharing information, knowledge, and experience in design as well as equipment to do the job. For example, one interviewee mentioned:

From 12 people (members), [the association] then quickly grew because people were tempted by the increased income ... Until finally the Rewo-Rewo Community had 300 members in 2014 (excluding school kids). (Interviewee AKB, male, 28 years old, a logo designer for six years)

In contrast, the development of “social commerce,” or marketing through social media, among craft businesses in Kamasan Village cannot be disentangled from the development of the Internet and smartphone technology. Because of differences in age and technology adoption, the majority of agents who influenced social media usage in this village were young people whose parents worked as crafters (see [Figure 3](#)). Driven by youthful enthusiasm and a desire to meet consumer needs, the craftspeople’s children looked for ways to carry out wider marketing using social media. They were largely competent in using the Internet and social media platforms such as Instagram, Facebook, and WhatsApp. The Bali provincial government and Rumah Kreatif (a state-owned enterprise program), alongside certain student associations, played a quite significant role by providing technical guidance, training, and assisting in marketing craft products online. According to our interviews with the local government officials, these programs were part of the government efforts to enhance entrepreneurial ability and competence in online marketing among small and medium-sized enterprises, which is currently valued

important in the meantime. Such assistance was routinely carried out almost every year by several agencies at the provincial level, as an interviewee mentioned:

In the past, there was a training from Bali provincial government for online marketing. My son did an internship for seven days. The Bali Province SME training was carried out every Sunday. I was invited, but I asked my child who understood better the [digital] technology. [We came to know] the right ways of marketing methods online; [we also] got coaching money, and a certificate from this Bali provincial government program. (Interviewee AAS, male, 45 years old, has been working as a wayang painter)

Another key finding was that the more agents interact with each other, the more reflexivity they have. In other words, when there is intensive communication and interaction among agents, they are able to monitor each other's actions to see whether they are in accordance with previously set goals, which thus affects the social order (Cajaiba-Santana 2014). In Kaliabu, the relationship between third sector agents (activists) and other community members was strong, which in turn "replaced" the role of the government in responding to their social needs. In this bottom-up process, the minimal role of government was not a problem and the agents were able to encourage reflexive interactions in developing the logo design community. This facilitated new social practices and collective action. An interviewee mentioned that this reflexivity was possible as this kind of social interaction has long been a trend in the village:

My friend, who is a radio announcer, taught me how to design logos (and later on I took other friends to join me). When I was a kid, I studied here; this house was always full of people, almost every night. The laptop was used 24 hours a day. (Interviewee NIM, male, 32 years old, a logo designer since 2014)

It is worth noting that the need to learn intensively and collectively among logo designers in Kaliabu is driven by the complexity of the digital work they are engaged. As explained, they did not have formal education in design, meaning it fell on activists who already had knowledge and experience to teach other people who want to be involved in logo design. In addition, many logo designers, especially in the beginning, did not have computers, so that they needed to work in groups and share the equipment. They realized the benefits of digitalization, but

they faced significant limitations in teaching due to lack of formal education and poor English comprehension. Collective learning provided a way to overcome such obstacles. As the agents had high reflexivity, the activists believed their knowledge and benefits could be accumulated. As an interviewee described:

We improve design skills not in college, but through meet-ups, forums, also by inviting professional designers. The key is [that we are] feeling satisfied yet curious [to know more]. (Interviewee AKB, male, 28 years old, a logo designer for six years)

In contrast, social relationships in the Kamasan case do not appear as strong, as the need to conduct collective learning to comprehend digital technologies varied across the types of crafts produced. For those crafters whose products are exclusively sold for religious purposes, digital marketing was simply unnecessary. Regardless, the local government still sought to promote the use of digital technologies in these traditional businesses through training and various subsidies, so as to boost their competitiveness. Sharing knowledge about digital technologies occurred mainly within families, while communication between crafters and other stakeholders was rather weak. As an interviewee explained:

[We received] no advice from others; it is just myself who want to use online marketing, no suggestions from friends either. So, I just taught myself, and from high school I learned Photoshop, too. I develop it myself first, tried doing it and [thus we] can increase orders for wayang painting. (Interviewee SG, female, 24 years old, the child of a puppet painting craftsman)

We can only conclude that they learn by monitoring each other: “other people use social media, so I ought to do that too.” Compared with the Kaliabu case, the digital technology used in Kamasan is also much simpler; collective learning is therefore not as urgent. It is clear that such weak relationships do not result in either the reflexivity or social energy that leads to collective action among local communities. The utility of digital commerce became widely accepted, but its adoption and the learning processes surrounding it occurred individually.

To sum up, the categorization and aggregation of digitalization agents differ in both cases and this affects the amount of social energy available to promote collective learning (see [Table 1](#)). There are clear factors that determine these differences, namely the types of economic activities and the scope of digital tasks practiced. In Kaliabu,

Table 1. Comparison of the Two Cases.

	Kaliabu	Kamasan
General characteristics		
Location	In Magelang District, Central Java 501 km from Jakarta	In Klungkung District, Bali, 31 km from Denpasar
Area	5.48 km ² (incl. farm)	1.875 km ²
Population size	4,085	4,348
Cultural context	Village with Javanese culture	Indigenous village with Hindu–Balinese culture
Rural economy/economic base	Agriculture, with emerging logo design (graphic)	Non-agriculture (traditional crafts, e.g., wayang painting, weaving, carvings from bullet casings, silver and gold handicrafts)
Scope of digitalization	Digital service (narrow scope); the community adopted the digital technology themselves	Broad scope (social commerce), implemented through government programs
Forms of social innovation	Bottom-up initiative <ul style="list-style-type: none"> • Sharing economy • Education and tutorial • Employment (new job opportunities) • Placemaking (building social infrastructure, such as mosques and schools) 	Top-down initiative <ul style="list-style-type: none"> • Strengthening the ongoing practice of sharing economy • Knowledge and profit improvement of the businesses
Agents, agency, and reflexivity		
Main agents/agencies	Third sector (activists)	The provincial government
Interaction between agents and reflexivity	Intensive interactions and collective learning as triggered by the need to solve challenges of low digital literacy skills	<ul style="list-style-type: none"> • Weak ties as neighbors/clans • Adoption of social commerce within households, meaning reflexivity between actors is weak
Social energy	Strong	Weak
Institutional and social practices and legitimization		
Institutional changes	<ul style="list-style-type: none"> • Formation of new organizations, such as Rewo, SDC Kaliabu, and SITKOM, including their online groups (e.g., in Facebook) • New relationships with other stakeholders 	<ul style="list-style-type: none"> • No organization and new rules formed • The ongoing practice of sharing orders (subcontracting) strengthened

Table 1. *Continued*

	Kaliabu	Kamasan
Collective action and legitimation	<ul style="list-style-type: none"> • Logo designers create associations involved in collective learning • Legitimation gained through good communication with other people in the village 	<ul style="list-style-type: none"> • No specific collective action; adoption of the social commerce occurs within households • Legitimation occurs indirectly as social commerce is widely used and generates increasing income
<i>Social changes</i>		
Social control	<p>Openness, motivation to improve living</p> <ul style="list-style-type: none"> • Increased sympathy and solidarity • Decreased politeness to older people • Participation in community service decreases due to differences in working time, assuming that helping financially is sufficient. 	<p>Strong cultural values that filter actions</p> <p>Cultural value preserves the social system, but there is an increasing desire to develop business more intensively</p>
Change in norms and values		

logo design—which is classified in the narrow scope of digital work—requires higher digital literacy and skills than those in Kamasan, where digital technology (social commerce/broad scope of digital economies) is simpler (Bukht and Heeks 2017). When there are more complex digital skills to be attained, the need to interact and develop collective learning is greater. In Kaliabu, this yielded the emergence of third sector activists, who had the ability to influence and make bottom-up changes (Mulgan 2006).

Institutional Practices and Legitimation

As agents and reflexivity clearly differ between the two cases, digitalization is institutionalized differently in both cases. The promotion of digital technologies by agents who coordinate and communicate their ideas with other agents stimulates collective action in society. However, collective action differs dramatically between the two cases.

As the amount of social energy yielded by interactions between agents differs, different institutional changes occur. In Kaliabu, institutional changes are demonstrated by the establishment of a new organization, which plays an important role in nurturing new rules and relationship patterns with other stakeholders. Community members who became activists formed this new organization, indicating an initial change in the institutional arrangement. The Rewo-Rewo association was formed in 2013, and it gained wide reception among the village society in 2015. In the beginning, the association became a place for local community members who were interested in logo design but had no access to computers. This association created both online (Facebook group) and face-to-face platforms, through which members could share knowledge and experience about logo design. During this process, the association (i.e., the third sector agents) gained legitimacy by mainstreaming new jobs and facilitating the emerging profession. The emerging “digital jobs” were considered interesting and were sought after by wider groups, and the position of the association was widely recognized as an important part of the village. The association also set up rules for village residents who wished to undertake logo design activities, stipulating that they need to commit and maintain solidarity with each other in developing the logo design community. This is supported by the Javanese wisdom of sharing: “the more we share, the more we have” (see also Fahmi and Sari 2020).

In addition to this internal mechanism, logo designers who were involved in the association communicated well with other people in the village, including the Kaliabu village government. They regularly organized charity events and contributed to the renovation of social facilities in the village. According to interviews, this was done as an effort to show

that “the establishment of this forum can give benefits to the wider community in the village.” It can be reflected that through these events the logo design community sought to obtain power in the village and build legitimacy. This was necessary since the digital jobs that emerged as new practices in the village might be regarded as inappropriate for the local values. By doing these events the activists could show that the logo design community could contribute to solving the village’s problems and thus, their activities would be supported by the village government and the whole village community.

In comparison, collective action did not occur in the same way in Kamasan Village, as the adoption of social commerce was carried out individually through assistance and promotion by the local government. Nevertheless, in developing the program the government did not always pay attention to specific needs of local businesses and communities. Rather, as explained previously, they provide a generic, “one-size-fits-all” digitalization support to enhance entrepreneurial capacity. A crafters association was formed deliberately by the Klungkung district government for exhibition coordination purposes. However, this association did not play a significant role in promoting the use of digital technologies among crafters. Competition and collaboration among crafters occurred naturally, as they are neighbors and members of the village community, but they did not strive to strengthen their weak ties. Our interviews confirmed that the people in this village have not struggled with digitalization in their businesses because they did not need to improve their digital skills to use social commerce. As an interviewee explained:

The association did not play a role. But when we receive a lot of orders like this, for example, we get 20 large paintings [orders], usually we can’t do this ourselves. [As such], I share it with other crafters here. For the time being, we haven’t invited and collaborated in the use of digital tools. By sharing the orders and compensate with money [when we have a lot of orders], we can give share the work [income], that’s it. (Interviewee SG, female, 24 years old, the child of a puppet painting craftsman)

Social commerce, like social media, is relatively easy to use. As such, the adoption of social commerce occurred individually within each craftsman’s family. “Legitimacy” is created indirectly, in that social commerce is widely used in the village community and this reflects public recognition of the actions of agents who promote digital technologies and new social practices among the local crafters. Nevertheless, our

interviews confirmed that the new way of marketing indeed helped increase demands from consumers and indirectly strengthened a longer-standing practice of sharing orders. It can be concluded that the use of social commerce did not significantly engender institutional changes in Kamasan. Interactions between craftsmen are still largely limited to exhibitions and subcontracting practices. Social commerce became widely adopted and helped facilitate their businesses, but it did not shift rules nor interactions among agents.

Our findings resonate with previous studies that identify top-down initiatives as tending to be less effective at realizing social innovation (Martens et al. 2020; Neumeier 2017). Different types of digital technologies and initiatives in digitalization yielded different institutional changes in the rural communities that adopted digital technologies (see Table 1). Due to limitations in rural areas, more complex digital literacy and skills require collective learning, which more effectively stimulates collaboration to overcome challenges. Apart from this, as reflected by the Kaliabu case, institutional changes and legitimation were necessary not only to solve common problems among the agents who did not have sufficient digital literacy and skills and access to equipment but also to convince society that their jobs and activities are not contrary to the local values. In comparison, such institutional changes are not necessary in Kamasan since the digital technology adopted is simpler and importantly, social control in the form of cultural values play a strong role in maintaining existing practices.

Social Change

Social change is the outcome of social innovation and also the way in which the community normalizes its new practices (see Bock 2012). To examine the different social changes in the two cases, we should reflect on their socio-cultural contexts. Kaliabu is situated within Javanese tradition, while Kamasan is an indigenous community with strong Balinese–Hindu influences. This has implications for how agent actions control and change social institutions and systems (Joshi and Carter 2015). We found different social changes in both cases.

In Kaliabu, along with institutional changes and legitimation processes, there was a significant change in social values and norms. The emergence of logo design not only nurtured collaboration among people who had lack access to digital equipment and knowledge but also increased awareness of the village community across a broad spectrum of people who do and do not participate in the activity. The logo design association organized and sponsored social events, as confirmed through interviews.

We use money from the design logo community for social purposes and activities, such as helping ease the bill of people who are sick ... also helping the construction of schools and mosques ... and activities such as tours, iftar (break the fast) together, and tutorial events. People who are not logo craftsmen are also proud of the logo design community. This positive response is because the community has contributed 38–50 million rupiahs for the construction of a mosque. (Interviewee ABR, male, 39 years old, a logo designer for six years)

People are happy because the juvenile delinquency reduced by 90 percent; in the past there were many brawls, thieves, thugs, and murders. (Interviewee AKB, male, 28 years old, a logo designer for six years)

It is apparent that the new practices that have emerged from the logo design community strengthen solidarity in the village community. The community also obtained power which enabled their presence was welcome by other community members. However, some interviewees highlight changes in social values and norms in a negative way, noting a decreasing sense of togetherness and disrespect for parents. Many community members who work as logo designers, especially young people, are seldom present at community services on Sundays (*kerja bakti*) because they work at night, following the local times of their consumers who are mostly from the United States and Europe. These young people then pay other people to join the community service. In addition, many young people do not respect their parents because they feel that they have better financial capabilities and help their families with money, thereby shifting the power dynamics in their relationships.

As many kids become logo designers, some see the [formal] education unimportant; even the relationships between children and parents have worsen (due to materiality). An indication is the relationship between children and parents, [in that] the children have more income and they can contribute to family finances, they often give to buy daily necessities. However, this makes the children less polite and often argue against parental orders. (Interviewee ABR, male, 39 years old, has been working as a logo designer for six years)

In Kamasan, the use of social commerce does not appear to change social norms and values. As previously explained, digital marketing using social commerce increases demand and the practice of subcontracting among crafters has strengthened. Nevertheless, the existing social system

in this village has very strong social control over the actions of agents. There are strong elements of social control in Hindu–Bali communities, such as financial punishment for not participating in social and religious activities. This has ensured the community retains its values and norms.

There are no changes, only when there is work done together; the scope is still in the ‘banjar’ (smaller part of village community), like mutual cooperation. [It is] the same, still the same. Just like in the past, even though we use the internet, we are still the same as before when we meet siblings, greet each other and visit. Here in the village, we don’t depend on the internet for our customs. If you do not participate in community services, you will receive a fine from the banjar. (Interviewee TA, male, 23 years old, the child of a weaving fabric craftsman)

In brief, due to variances in reflexivity and social energy between agents and agencies, digitalization generates different changes in social norms and values in Kamasan and Kaliabu (see [Table 1](#)). Again, we conclude that the scope of digital economies is the main determinant of this outcome, as it greatly influences social and institutional practices. We also argue that openness and cultural value determine how the new values and practices instigated by digital technologies are blended with their existing social norms. Social changes that occur in Kaliabu Village are driven by the characteristics of a community that accepts change and is not subject to strong measures of social control. Meanwhile, social control as well as the less intensive use and impact of social commerce in Kamasan did not sufficiently trigger new social practices among the community members.

Conclusion

We have investigated how digitalization influences social innovation in rural communities. Digitalization provides various opportunities and challenges for such communities (e.g., Salemink et al. [2017](#)). As such, it is important to consider how digital technologies do not create additional problems that contribute to persistent challenges in rural areas but rather stimulate innovative practices for overcoming these challenges (see Bock [2012](#); Bosworth et al. [2016](#); Trivelli and Berdegué [2019](#)). The cases of Kaliabu and Kamasan provide evidence for how differing scopes of digital economies and digital technologies that have been adopted as well as characteristics of local businesses and socio-cultural identities, which influence the process and outcome of social innovation.

We found that the use of digital technologies in rural livelihood strategies indeed stimulates new social and institutional practices in rural areas. Our findings resonate with previous studies that demonstrate

social innovation can happen due to collective action among agents (see André et al. 2013; Cajiaba-Santana 2014). Affirming the agent-based approach to social innovation, we found that the adoption of digital technologies is pioneered by several agents, and then diffused more widely within rural communities (see Mariën and Prodnik 2014; Rogers 2003; Saleminck et al. 2017). On the other side, it is clear that social innovation is an institutional change and legitimation process, which eventually changes social systems and values (Cajiaba-Santana 2014). Related to this, it is worth noting that the rural communities do not always welcome the social changes that emerge from digitalization since these might not align with the local values.

There are at least two important points that should be highlighted. First, the scope of digital economies, or the complexity of digitalization, determines institutional practices. As the scope of digital economies that are adopted differs, the complexity of adoption and the digital literacy and skills required for such processes also vary. Digital economies that are more complex or narrower in scope require higher literacy and skills. As rural communities disproportionately suffer from disadvantages in digital inequality and inability, the use of more complex digital technologies is generally more problematic, particularly in the Global South (Martens, Wolff, and Hanisch 2020; Neumeier 2017). Nevertheless, at the same time, it provides room for expedited learning and urges them to fight collectively. In other words, social innovation here is a form of collective mechanism used to seize opportunities from digitalization and survive vulnerability.

Second, power and social control play an essential role in the legitimation processes. Our case study in Kaliabu and Kamasan has shown that complex digital economies stimulate reflexivity among agents, which clearly helps in nurturing a social drive to learn new skills and solve problems. In Kaliabu, the presence of third sector activists, who actually originate from the village community itself, marks a unique feature that determines how agents are reflexive and thus stimulate the legitimation of new practices triggered by the use of digital technologies. These particular agents realized their role by forming a new organization that set up rules for members and opened up communication with and recognition from the wider community. As such, these activists gained power and build legitimacy within society. Social values and norms were also reimagined alongside new institutional practices. Cultural value clearly mediates this process, in that openness and courage to change facilitates agents building legitimacy. In comparison, although the role of government in promoting digitalization in Kamasan opens up knowledge of the local communities and

businesses, adoption of digital technology is done rather individually and thus, it does not nurture reflexivity of agents. The strong social control as an implication of the cultural value also limits the changes in social systems.

We also pose that bottom-up initiatives, in a sense of using digital technologies as “natural” needs in local community livelihoods, are more effective ways of realizing collective learning and reflexive processes among agents (Martens et al. 2020; Neumeier 2017). In comparison, top-down programs that are not tailor-made to specific needs and contexts appear to be less effective in promoting benefits and hindering negative effects of digitalization. In this respect, a relevant policy implication would be the development of a conducive climate which stimulates collective learning should instead be identified as an aim and endorsed, so as to promote social innovation in rural communities.

Although our case study considers differing conditions of digitalization and main economic activities in rural areas that suggest a robust generalization, each case has unique and strong cultural contexts that might not always reflect other situations in the Global South. We thus recommend comparing the specific contexts in which social innovations pertain to. In addition, our case study also does not cover digitalization in the agricultural sector, whereas it is still a main livelihood in many rural areas. Further research could focus on social processes and outcomes of other scopes of digital economies (e.g., the core digital sector) as well as digitalization in farming communities.

References

- André, Isabel, Alexandre Abreu, and André Carmo. 2013. “Social Innovation Through the Arts in Rural Areas: The Case of Montemor-o-Novo 2013.” Pp. 242–55 in *The International Handbook on Social Innovation Collective Action, Social Learning and Transdisciplinary Research*, edited by F. Moulaert, D. Maccallum, A. Mehmood, and A. Hamdouch. Cheltenham, UK and Northampton, MA: Edward Elgar.
- Avelino, Flor and Julia M. Wittmayer. 2016. “Shifting Power Relations in Sustainability Transitions: A Multi-Actor Perspective.” *Journal of Environmental Policy & Planning* 18(5):628–49. <https://doi.org/10.1080/1523908X.2015.1112259>.
- Bell, David and Mark Jayne. 2010. “The Creative Countryside: Policy and Practice in the UK Rural Cultural Economy.” *Journal of Rural Studies* 26(3):209–18. <https://doi.org/10.1016/j.jrurstud.2010.01.001>.
- Belton, Ben and Mateusz Filipiński. 2019. “Rural Transformation in Central Myanmar: By How Much, and for Whom?” *Journal of Rural Studies* 67:166–76. <https://doi.org/10.1016/j.jrurstud.2019.02.012>.
- Berdegú, Julio A., Tomás Rosada, and Anthony Bebbington. 2014. “The Rural Transformation.” Pp. 463–78 in *International Development: Ideas, Experience and Prospect*, edited by Bruce Currie-Alder, Ravi Kanbur, David Malone, and Rohinton Medhora. Oxford: Oxford University Press.

- Bock, Bettina. 2012. "Social Innovation and Sustainability; How to Disentangle the Buzzword and Its Application in the Field of Agriculture and Rural Development." *Studies in Agricultural Economics* 114(2):57–63. <https://doi.org/10.7896/j.1209>.
- Bosworth, Gary, Fulvio Rizzo, Doris Marquardt, Dirk Strijker, Tialda Haartsen, and Annette Aagaard Thuesen. 2016. "Identifying Social Innovations in European Local Rural Development Initiatives." *Innovation: The European Journal of Social Science Research* 29(4):442–61. <https://doi.org/10.1080/13511610.2016.1176555>.
- Bowen, Robert and Wyn Morris. 2019. "The Digital Divide: Implications for Agribusiness and Entrepreneurship. Lessons from Wales." *Journal of Rural Studies* 72:75–84. <https://doi.org/10.1016/j.jrurstud.2019.10.031>.
- Bryceson, Deborah Fahy. 1996. "Deagrarianization and Rural Employment in Sub-Saharan Africa: A Sectoral Perspective." *World Development* 24(1):97–111. [https://doi.org/10.1016/0305-750X\(95\)00119-W](https://doi.org/10.1016/0305-750X(95)00119-W).
- Bukht, Rumana and Richard Heeks. 2017. "Defining, Conceptualising and Measuring the Digital Economy." *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3431732>.
- Cajaiba-Santana, Giovany. 2014. "Social Innovation: Moving the Field Forward. A Conceptual Framework." *Technological Forecasting and Social Change* 82:42–51. <https://doi.org/10.1016/j.techfore.2013.05.008>.
- Castells, Manuel. 2010. *The Power of Identity*. 2nd ed., with a new preface. Malden, MA: Wiley-Blackwell.
- Castro-Arce, Karina and Frank Vanclay. 2020. "Transformative Social Innovation for Sustainable Rural Development: An Analytical Framework to Assist Community-Based Initiatives." *Journal of Rural Studies* 74:45–54. <https://doi.org/10.1016/j.jrurstud.2019.11.010>.
- Chowdhury, Imran. 2020. "Bridging the Rural-Urban Divide in Social Innovation Transfer: The Role of Values." *Agriculture and Human Values* 37(4):1261–79. <https://doi.org/10.1007/s10460-020-10132-7>.
- Christmann, Gabriela B. 2020. "Introduction: Struggling with Innovations. Social Innovations and Conflicts in Urban Development and Planning." *European Planning Studies* 28(3):423–33. <https://doi.org/10.1080/09654313.2019.1639396>.
- Czyzewski, Marek. 1994. "Reflexivity of Actors Versus Reflexivity of Accounts." *Theory, Culture & Society* 11(4):161–68. <https://doi.org/10.1177/026327694011004006>.
- Demos. 2005. *Beyond Digital Divides? The Future for ICT in Rural Areas*. London: Commission for Rural Communities.
- Dey, Ian. 1993. *Qualitative Data Analysis: A User-Friendly Guide for Social Scientists*. London: New York: Routledge.
- Diao, Xinshen, Eduardo Magalhaes, and Jed Silver. 2019. "Cities and Rural Transformation: A Spatial Analysis of Rural Livelihoods in Ghana." *World Development* 121:141–57. <https://doi.org/10.1016/j.worlddev.2019.05.001>.
- Dunfey, T. S. 2019. "What Is Social Change and Why Should We Care?"
- Fahmi, Fikri Zul and Ivanie Destila Sari. 2020. "Rural Transformation, Digitalisation and Subjective Wellbeing: A Case Study from Indonesia." *Habitat International* 98:102150. <https://doi.org/10.1016/j.habitatint.2020.102150>.
- Faucher, J. B. 2010. "Reconceptualizing Knowledge Management: Knowledge, Social Energy, and Emergent Leadership in Social Complex Adaptive Systems." Thesis, Doctor of Philosophy, University of Otago.
- Firman, Tommy. 2017. "The Urbanisation of Java, 2000–2010: Towards 'the Island of Mega-Urban Regions'." *Asian Population Studies* 13(1):50–66. <https://doi.org/10.1080/17441730.2016.1247587>.
- Futemma, Célia, Fábio De Castro, and Eduardo S. Brondizio. 2020. "Farmers and Social Innovations in Rural Development: Collaborative Arrangements in Eastern Brazilian Amazon." *Land Use Policy* 99:104999. <https://doi.org/10.1016/j.landusepol.2020.104999>.
- Giddens, Anthony. 1979. *Central Problems in Social Theory: Action, Structure, and Contradiction in Social Analysis*. Berkeley: University of California Press.

- Greve, H. R. and L. Argote. 2015. "Behavioral Theories of Organization." Pp. 481–86 in *International Encyclopedia of the Social & Behavioral Sciences (Second Editions)*, edited by J. D. Wright. Florida: Elsevier Science.
- Grimm, Robert, Christopher Fox, Susan Baines, and Kevin Albertson. 2013. "Social Innovation, an Answer to Contemporary Societal Challenges? Locating the Concept in Theory and Practice." *Innovation: The European Journal of Social Science Research* 26(4):436–55. <https://doi.org/10.1080/13511610.2013.848163>.
- Meerstra-de Haan, Erzi, Tialda Haartsen, Sabine Meier, and Dirk Strijker. 2020. "An Initiators' Perspective on the Continuity of Citizens' Initiatives in Rural Areas." *Rural Sociology* 85(1):213–34. <https://doi.org/10.1111/ruso.12288>.
- Hollingsworth, J. Rogers. 2000. "Doing Institutional Analysis: Implications for the Study of Innovations." *Review of International Political Economy* 7(4):595–644. <https://doi.org/10.1080/096922900750034563>.
- Howaldt, Jürgen, R. Kopp, and S. Michael. 2015. "Social Innovations as Drivers of Social Change – Exploring Tarde's Contribution to Social Innovation Theory Building." Pp. 29–51 in *New Frontiers in Social Innovation Research*, edited by A. Nicholls, J. Simon, and M. Gabriel. London: Palgrave Macmillan UK.
- IFAD. 2016. *Rural Development Report 2016: Fostering Inclusive Rural Transformation*. Quintily, Rome: International Fund for Agricultural Development (IFAD).
- ITU. 2020. "Measuring Digital Development Facts and Figures 2020."
- Joshi, A. and B. Carter. 2015. *Public Sector Institutional Reform: Topic Guide*. Birmingham, UK: GSDRC, University of Birmingham.
- Kingston, Christopher and Gonzalo Caballero. 2009. "Comparing Theories of Institutional Change." *Journal of Institutional Economics* 5(2):151–80. <https://doi.org/10.1017/S1744137409001283>.
- Lindhult, E. 2008. "Are Partnerships Innovative?" Pp. 37–54 in *Partnership – As A Strategy for Social Innovation and Sustainable Change*, edited by L. Svensson and B. Nilsson. Stockholm: Satérus Academic Press.
- Malecki, Edward J. 2003. "Digital Development in Rural Areas: Potentials and Pitfalls." *Journal of Rural Studies* 19(2):201–14. [https://doi.org/10.1016/S0743-0167\(02\)00068-2](https://doi.org/10.1016/S0743-0167(02)00068-2).
- Manzini, Ezio. 2014. "Making Things Happen: Social Innovation and Design." *Design Issues* 30(1):57–66. https://doi.org/10.1162/DESI_a_00248.
- Mariën, Ilse and Jernej A. Prodnik. 2014. "'Digital Inclusion and User (Dis) Empowerment: A Critical Perspective" edited by Dr. Luciano Morganti, Assistant Prof. Nathalie Helberger." *Info* 16(6):35–47. <https://doi.org/10.1108/info-07-2014-0030>.
- Mariscal, Judith. 2005. "Digital Divide in a Developing Country." *Telecommunications Policy* 29(5–6):409–28. <https://doi.org/10.1016/j.telpol.2005.03.004>.
- Martens, Katrin, Anke Wolff, and Markus Hanisch. 2020. "Understanding Social Innovation Processes in Rural Areas: Empirical Evidence from Social Enterprises in Germany." *Social Enterprise Journal* 17(2):220–39.
- Miles, Matthew B., A. M. Huberman, and Johnny Saldaña. 2014. *Qualitative Data Analysis: A Methods Sourcebook*. 3rd ed. Thousand Oaks, California: SAGE Publications Inc.
- Millard, J. and G. Carpenter. 2014. "Digital Technology in Social Innovation, European Commission: A Synopsis. A Publication from the FP7-Project: TEPSIE (290771)."
- Moseley, Malcolm J. and Stephen Owen. 2008. "The Future of Services in Rural England: The Drivers of Change and a Scenario for 2015." *Progress in Planning* 69(3):93–130. <https://doi.org/10.1016/j.progress.2007.12.002>.
- Mulgan, Geoff. 2006. "The Process of Social Innovation." *Innovations: Technology, Governance, Globalization* 1(2):145–62. <https://doi.org/10.1162/itgg.2006.1.2.145>.
- Nambisan, Satish. 2017. "Digital Entrepreneurship: Toward a Digital Technology Perspective of Entrepreneurship." *Entrepreneurship Theory and Practice* 41(6):1029–55. <https://doi.org/10.1111/etap.12254>.
- Naranjo-Valencia, Julia C., Ana C. Ocampo-Wilches, and Luis F. Trujillo-Henao. 2020. "From Social Entrepreneurship to Social Innovation: The Role of Social Capital.

- Study Case in Colombian Rural Communities Victim of Armed Conflict.” *Journal of Social Entrepreneurship* 1–34. <https://doi.org/10.1080/19420676.2020.1770317>.
- Neumeier, Stefan. 2012. “Why Do Social Innovations in Rural Development Matter and Should They Be Considered More Seriously in Rural Development Research? - Proposal for a Stronger Focus on Social Innovations in Rural Development Research: Social Innovations in Rural Development.” *Sociologia Ruralis* 52(1):48–69. <https://doi.org/10.1111/j.1467-9523.2011.00553.x>.
- . 2017. “Social Innovation in Rural Development: Identifying the Key Factors of Success.” *The Geographical Journal* 183(1):34–46. <https://doi.org/10.1111/geoj.12180>.
- Nicholls, Alex, Julie Simon, and Madeleine Gabriel, eds. 2015. *New Frontiers in Social Innovation Research*. London: Palgrave Macmillan UK.
- Noack, Anika and Tobias Federwisch. 2020. “Social Innovation in Rural Regions: Older Adults and Creative Community Development*.” *Rural Sociology* 85(4):1021–44. <https://doi.org/10.1111/ruso.12333>.
- North, Douglass C. 1990. *Institutions, Institutional Change and Economic Performance*. 1st ed. Cambridge: Cambridge University Press.
- Ohlan, Ramphul. 2016. “Rural Transformation in India in the Decade of Miraculous Economic Growth.” *Journal of Land and Rural Studies* 4(2):188–205. <https://doi.org/10.1177/2321024916640110>.
- Pol, Eduardo and Simon Ville. 2009. “Social Innovation: Buzz Word or Enduring Term?” *The Journal of Socio-Economics* 38(6):878–85. <https://doi.org/10.1016/j.socce.2009.02.011>.
- Räisänen, Jaana and Tero Tuovinen. 2020. “Digital Innovations in Rural Micro-Enterprises.” *Journal of Rural Studies* 73:56–67. <https://doi.org/10.1016/j.jrurstud.2019.09.010>.
- Rigg, Jonathan. 2001. *More Than the Soil: Rural Change in Southeast Asia*. Harlow, Essex: Prentice Hall.
- . 2007. *An Everyday Geography of the Global South*. London; New York: Routledge.
- . 2020. *Rural Development in Southeast Asia: Dispossession, Accumulation and Persistence*. Cambridge: Cambridge University Press.
- Roberts, Elisabeth and Leanne Townsend. 2016. “The Contribution of the Creative Economy to the Resilience of Rural Communities: Exploring Cultural and Digital Capital.” *Sociologia Ruralis* 56(2):197–219. <https://doi.org/10.1111/soru.12075>.
- Rogers, Everett M. 2003. *Diffusion of Innovations*.
- Salemink, Koen, Dirk Strijker, and Gary Bosworth. 2017. “Rural Development in the Digital Age: A Systematic Literature Review on Unequal ICT Availability, Adoption, and Use in Rural Areas.” *Journal of Rural Studies* 54:360–71. <https://doi.org/10.1016/j.jrurstud.2015.09.001>.
- Sengupta, Jati. 2014. “Schumpeterian Innovation.” Pp. 63–77 in *Theory of Innovation*. Cham: Springer International Publishing.
- Sorensen, Tony. 2009. “Creativity in Rural Development: An Australian Response to Florida (or a View from the Fringe).” *International Journal of Foresight and Innovation Policy* 5(1/2/3):24. <https://doi.org/10.1504/IJFIP.2009.022097>.
- Staab, Philipp. 2017. “The Consumption Dilemma of Digital Capitalism.” *Transfer: European Review of Labour and Research* 23(3):281–294. <https://doi.org/10.1177/1024258917702830>.
- Tremblay, Jessika. 2018. “Internet Kampung: Community-Based Internet in Post-Suharto Indonesia.” *Indonesia* 105(1):97–125. <https://doi.org/10.5728/indonesia.105.0097>.
- Trivelli, C. and J. A. Berdegúe. 2019. “Rural Transformation. Looking towards the Future of Latin America and the Caribbean. 2030 - Food, Agriculture and Rural Development in Latin America and the Caribbean, No. 1. Santiago.”
- Velaga, Nagendra R., Mark Beecroft, John D. Nelson, David Corsar, and Peter Edwards. 2012. “Transport Poverty Meets the Digital Divide: Accessibility and Connectivity in Rural Communities.” *Journal of Transport Geography* 21:102–12. <https://doi.org/10.1016/j.jtrangeo.2011.12.005>.

Westley, Frances and Nino Antadze. 2010. "Making a Difference: Strategies for Scaling Social Innovation for Greater Impact." *The Innovation Journal: The Public Sector Innovation Journal* 15(2):article 2.

Yin, Robert K. 2014. *Case Study Research: Design and Methods*. 5th ed. Los Angeles: SAGE.

Zerrer, Nicole and Ariane Sept. 2020. "Smart Villagers as Actors of Digital Social Innovation in Rural Areas." *Urban Planning* 5(4):78–88. <https://doi.org/10.17645/up.v5i4.3183>.