Chapter 5
Social Intermediation Using Sharing Economy in India: A Case Study of Farmizen

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Abstract Using a case study approach of a pioneering social enterprise in India, this study identifies primary characteristics of a digitally anchored sharing economy model at the base of the pyramid (BoP) and explores the role of such a model in the process of social intermediation and value creation. Research suggests that digital stack, access without ownership, temporality of access, and value co-creation are the primary characteristics of the sharing economy model. Our case study of Farmizen reveals that the sharing economy model enables social intermediation and value creation in the resource-constrained setting by reducing transaction costs, mitigating risks, increasing income level, and increasing socialisation between producers and consumers. Overall, this study contributes to the social intermediation literature by highlighting that sharing economy models can facilitate the process of social intermediation and can be leveraged to achieve sustainable livelihood in the BoP context.

Keywords Digital social innovation · Social intermediation · Sharing economy · Technoficing · Platform economy · Social value creation · Base of the pyramid

5.1 Introduction

India is home to the largest number of the world's base of the pyramid (BoP) population, where over 700 million people live at less than 2 USD income per day. The BoP markets are rampant with macro and micro impediments, which create

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challenges for the inclusive market formation and fail to generate sustainable livelihood options for its population (Hota et al., 2019; Kistruck et al., 2013; Mair et al., 2012; Parmigiani & Rivera-Santos, 2015). These constraints impact trade activity not just within the BoP context but also with their counterparts in more developed markets. Further, macro-level impediments like policy paralysis, regulatory proliferation resulting in entry and exit barriers for business, and abject poverty continue to persist, requiring more focused and large-scale interventions. At the micro-level, market and productivity-related constraints such as longer supply chain, lack of access to formal credit, information asymmetry, and risk of moral hazard are some of the issues faced by the BoP producers. These constraints at various levels lead to escalated transaction costs (Bendul et al., 2017; Palomares-Aguirre et al., 2018; Parthiban et al., 2021).

Spulber (1996) defines an intermediary as, "an economic agent who purchases from suppliers for resale to buyers or who helps buyers and sellers meet and transact". The unscrupulous commercial intermediaries exploit BoP situation by extracting rents and capturing most of the value generated (Andreassen et al., 2018). Thus, BoP producers are left with no meaningful surplus income. They do not have the option of bypassing intermediaries as the dyadic (direct) exchange is known to cost higher with escalated transaction costs for the BoP producers. Intermediation efforts focus on lowering these costs to below the efficiency levels of transaction costs associated with a dyadic exchange resulting now in an expanded triadic exchange involving the producer, the intermediary and the consumer (Spulber, 1999). Non-market institutions anchored in social objectives are bound to step into scenarios where market institutions fail to reach the optimal state. It is the social institutions and specifically social intermediaries that help bridge the gap in such contexts (Arrow, 2018, p.947; Kistruck, 2008: Kistruck et al., 2013). The objectives of 'social intermediaries' are broader than intermediation in its popular sense. It involves accomplishing social goals through at least in part, in a financially sustainable manner rather than relying on grants for such purposes through state or other agencies (Kistruck, 2008; Kistruck et al., 2013). A social intermediary helps BoP producers by passing on the cost savings accrued by lower transactions costs, whereas intermediaries such as those in the commercial real estate sector will appropriate the same as brokerage. Broadly, the mechanism strives to maximise the value captured and redistribute the cost savings to the producers. In many instances, social intermediary is a social enterprise. They are defined as organisations that 'combine the pursuit of financial objectives with the pursuit and promotion of substantive and terminal values' (Cho, 2006).

As noted above, poorly developed institutions, a non-munificent ecosystem, and a high degree of information asymmetry result in higher transaction costs in the BoP communities (Bhatt et al., 2019; Qureshi et al., 2018b). In such a context, social intermediaries aim to reduce transaction cost through various strategies (Kistruck & Beamish, 2010; Parthiban et al., 2021; Shalini et al., 2021). Further, as social intermediaries also push for efforts towards group formation, capability building, knowledge dissemination, opportunity awareness, and building social capital (Bhatt, 2017; Hans, 2014; Singh et al., 2015), there exists a tendency for intermediaries to

actively seek out transactions with positive externalities which produce a "trickle-down effect" (Karnani, 2007).

In the last couple of decades, several business models have been deployed at the BoP by social intermediaries to achieve the above-stated objectives and among them the model of sharing economy holds promise (Bonina et al., 2021). While sharing of various products and personal time in several societies is an age-old practice, the emergence of Web 2.0 technologies has led to the proliferation of the concept at a much larger scale and scope (Belk, 2014). Scholars have provided various frameworks and definitions for the sector to capture its varied scope and functions. However, in the extant research, the term is widely considered to be an umbrella concept straddling disciplines of geography, law, management, economics, among others. Nevertheless, despite the lack of a clear definition, there is consensus on how the sharing economy models are capable of transforming the living conditions of the people at the BoP through sustainable growth and restructure the economy by building sustainable linkages with more developed markets (PWC, 2017; Richardson, 2015; Schor & Fitzmaurice, 2015).

For this chapter, we adopt the definition provided by Muñoz and Cohen (2017), who define sharing economy as "socio-economic system enabling an intermediated set of exchanges of goods and services between individuals and organisations which aim to increase efficiency and optimisation of sub-utilised resources in society" (p.27). Acquier et al. (2017) posit that the concept of sharing economy rests on three major cores, namely, the access economy, platform economy, and the community-based economy. While these three cores are distinct in terms of their promises and attributes, one can see the plurality of these in the sharing economy models of several social intermediaries such as the one discussed in this chapter.

While extant literature offers insights on how the sharing economy models function in the developed markets, studies concerning the inherent problems faced by social intermediaries in the development and implementation of sharing economy models in the developing world are still in nascent stages. There is a lack of studies that capture the paradoxes and tensions of social intermediation in these innovative business models in the developing world. Extending the literature of market linkages and intermediation, Kistruck et al. (2013) address some of these aspects on how social intermediaries structure their transactional decisions when dealing with the tensions in the BoP. In this chapter, we attempt to extend their work in the context of sharing economy. Particularly, we aim to integrate social intermediation and the sharing economy research streams to show how a social intermediary deploys the sharing economy model in the BoP communities. This chapter draws on the social intermediation literature to understand how a sharing economy business model enables social intermediation and creates social value at the BoP. The following two interrelated research questions are explored in the chapter:

1. What are the primary characteristics of a digitally anchored sharing economy model at the BoP?
2. How does this model enable the process of social intermediation and help social value creation?

We use the case study of Farmizen, a social enterprise in India, to investigate these questions. The study broadly contributes to the social intermediation literature by understanding how a social intermediary successfully manoeuvres the constraints in the BoP using a sharing economy model. It further helps to understand how value creation process evolves in a peer-to-peer digitally intermediated model and how sharing economy models can be leveraged to achieve sustainable livelihood in a resource-constrained environment such as in India.

5.2 Literature Review

5.2.1 Sharing Economy in Resource-Constrained Environments

The sharing economy, which includes collaborative consumption, access economy, or connected consumption, is considered to hold promise in developing markets and has the potential to provide upward mobility to the people at the BoP (Refer to Buhalis et al., 2020; Dreyer et al., 2017 for a contrary view; Parthiban et al., 2020; Shalini et al., 2021). The current growth in the sharing economy sector is driven by the emergence of changing lifestyles in urban consumers, the evolution of digital platforms along with the development of new skills and services (Harmaala, 2015). However, unlike more developed markets, the BoP encounters several endogenous constraints with the process and resource-driven inefficiencies and non-existent or malfunctioning market-supporting institutions, rendering transactions unprofitable or unfeasible (Hota et al., 2021; Kislev & Peterson, 1981; Rada et al., 2019; Khanna & Palepu, 1997). The majority of farmers in developing countries, including India, belong to BoP. However, extant BoP literature simply considers the marginal small landholder farmers as an untapped purchasing power and suggests how corporates can make a fortune from these untapped markets (Prahalad, 2005; refer to Karnani, 2007 and Qureshi et al., 2021c for a critique). The approach seems to be driven by consumerism, profit motives of corporates, and expansion of existing markets (Prahalad & Ramaswamy, 2004; Viswanathan et al., 2009). In this stream of research, there is no room for seeing BoP population as producers or developing their capability to create livelihood opportunities.

Sharing economy proponents who are inspired by a consumer-centric view of BoP define access-based models as "giving customers access to a good for a period of time in return for an access payment, thereby offering a certain degree of freedom in using this product while legal ownership remains with the service provider" (Schaefers et al., 2018, p. 422). Access-based models result in only a fraction of the cost of ownership accruing to the consumer as opposed to actually owning the product and also without accruing the risks and responsibilities like maintenance that comes with ownership of the asset (Moeller et al., 2013; Schaefers et al., 2016). Nevertheless, the importance of acknowledging the BoP population as producers

and understanding their needs has been increasingly recognised in the BoP literature (Bhatt, 2021; Hota et al., 2019; Mair et al., 2012; Parthiban et al., 2021; Qureshi et al., 2018b). Researchers have started investigating how social intermediaries help BoP producers overcome various constraints they face (Bhatt, 2021; Parthiban et al., 2021; Shalini et al., 2021). One approach to overcoming these constraints of BoP producers is by developing capabilities and improving access to the market (Bhatt, 2017; Karnani, 2007; London & Hart, 2004; Parthiban et al., 2021), which in turn increase their opportunity to earn better livelihood and help in alleviating income poverty. Further, there is recognition of how market linkages between BoP producers and non-local consumers can help the former to better understand market dynamics, including consumer preferences, food safety and quality measures, among others, resulting in mutual value creation (London et al., 2010; Parthiban et al., 2021).

It is here that access-based digital platforms are considered to hold potential in helping overcome the constraints faced by the BoP producers (Qiu et al., 2021; Qureshi et al., 2021a, b), who are primarily engaged in producing commodity as well as non-commodity products in resource-constrained informal settings (Parthiban et al., 2021; Qureshi & Fang, 2011; Shalini et al., 2021). As BoP contexts suffer from market linkages and information asymmetry-related issues, digital platforms help create value through information dissemination and processing. Further, Parthiban et al. (2020) state how in the BoP context digital technologies provide significant direction in filling institutional voids by facilitating a complementary voids approach for value creation (cf Qureshi et al., 2021c). Digital platforms are considered the core of the fast-emerging digital economy that relies on decentralised exchanges among peers (Qureshi & Fang, 2011; Sundararajan, 2017; Srnicek, 2017). In this peer-to-peer arrangement, the production processes, instead of being centralised, get externalised to entities. Digital platforms are used as a tool to control these transactions remotely (Bonina et al., 2021).

The digital platform-based sharing economy model is considered disruptive for the status quo because of its scaling potential and the resulting efficiencies. This holds the promise for impoverished BoP settings (Acquier et al., 2017; Benkler, 2012; Edelman & Geradin, 2018), as technoficing can result in implementation of simple and inexpensive yet effective technology to create social impact (Qureshi et al., 2021c, see also Parthiban et al., 2021). In addition, there is growing evidence that such digital social innovation driven platforms also needs to be embedded in the social ecosystem (Escobedo et al., 2021; Parthiban et al., 2020; Qureshi et al., 2021c). In contrast, the large scale implementation of platforms need to build considerable techno-organisational capabilities for effective value creation (Prakash & De', 2007; Rahman et al., 2019). Further, apart from the access over ownership feature, there exist other dimensions that help understand the normative underpinnings of sharing economy model. Value co-creation serves as a prominent dimension along with the duration and frequency of these facilitated transactions. All of these have pertinent implications for the social intermediation process (Acquier et al., 2017; Kistruck et al., 2013). Scholars have observed how the sharing economy model, owing to its digital features, strengthens the co-creation activity in the

BoP. This is due to the intensive interaction and repeated participation facilitated by the digital platform (Parthiban et al., 2021; Qureshi & Fang, 2011; Qureshi et al., 2018a). Consumers develop a sense of ownership, belonging, and also reciprocity among themselves, resulting in repeated participation (Bouncken & Reuschl, 2018; Celata et al., 2017; Lan et al., 2017). The temporality aspect of transactions further explains this aspect of the sharing economy model. Temporality is considered to have a significant bearing on how affordable the exercise is for the consumer, especially in an access-based format (Dabbous & Tarhini, 2019). Utility assessment, flexibility in transactions, perceived affordability of the product are all factors that are affected by the temporality factor. Further, Lan et al. (2017) state how the cultural and cognitive aspects have a bearing on these new age socio-economic business models and how they underpin the same in its value creation pursuit. This chapter aims to understand some of these characteristics of the sharing economy model through a case study approach.

5.2.2 Social Intermediation and Social Value Creation at the BoP

The extant literature provides some evidence of poverty alleviation efforts in resource-constrained environments by strengthening local markets and better integration with developed markets (Kistruck et al., 2013; Milanovic, 2005; Richter et al., 2017). However, the presence of market and productivity-related constraints, as stated earlier, proves to be a dampener for effective intermediation efforts at the BoP. These constraints affect the market formation, resulting in disaggregated economic activity in the BoP contexts with a dominance of informal transactions (Delios & Henisz, 2000; Hoskisson et al., 2000; Martin et al., 2000). In the last couple of decades, one can see the evolution of market-based intermediaries emerging to build market linkages by leveraging the underutilised resources in the BoP and creating opportunities for better livelihoods (Hota et al., 2019; Hota & Mitra, 2021; Richter et al., 2017). However, many commercial intermediaries are more concerned with profit maximisation for their shareholders, resulting in the exploitation of BoP producers. For example, in the real estate sector, one can notice how the commercial intermediaries seek rent to reduce the transaction costs, but only to the extent the cost remains lower than costs associated with a direct transaction, resulting in opportunistic behaviour.

Social intermediaries, on the other hand, are rooted in the BoP contexts and have a better understanding (and solutions), compared to their commercial counterparts, to address various issues encountered by BoP producers (Kistruck et al., 2013). These organisations are driven by the dual aspects of utilising the market-oriented mechanisms for social purposes, for the purpose of redistributing cost savings beyond the cost accrued (Kistruck et al., 2013; Young et al., 2007). Commercial

intermediaries, on the other hand, are designed to leverage on the transactional inefficiencies to generate benefits whereas their social counterparts are more inclined to improve the transactional capabilities by reducing their cost and reducing associated risks in an altruistic manner. They thrive on their strong socially embedded footing among the BoP consumers and producers, which is further solidified with the specialised knowledge they possess about the ecosystem (Barney, 1991; Teegen et al., 2004). Thus, it can be concluded that the primary function of social intermediation rests on the idea of restructuring market mechanisms to enable trade. This involves building newer supply chains to facilitate transactions at lower costs associated with the sale of improved upon old or completely new products that suit the demand from the more developed markets (Kistruck, 2008).

Another pertinent aspect or rather an extension to the concept of social intermediation is the creation of social value as an outcome (Bhatt, 2017). There is an effort made by scholars to reconceptualize the term to make it more holistic and universal (Sinkovics et al., 2015). In this definition, they also attempt to factor in the constraints concept of BoP put forward by Ted London and other scholars to come up with a universal definition for social value creation, which is inclusive of social as well as economic, and human rights aspects. Self-esteem and sustenance form part of the definition, which primarily hinges on alleviation of social constraints (London et al., 2010; London & Hart, 2011; Sinkovics et al., 2015). Acs et al. (2013) makes another distinction based on the contextual differences in constraints in BoP population found in developed and developing regions and observe that social value creation in the margins are more recognised and stark compared to the developed regions as the underlying constraints itself is more visible.

At a micro-level, Theodorakopoulos et al. (2013), through their action research, states how matchmaking between suppliers and consumers, capability development among peers in the network from all sides, including the suppliers as well as the consumers are all 'boundary encounters' which guide intermediation activities in a broader sense. This navigation of boundaries between stakeholders and their practices and improving its quality is what social intermediation would ensue (Sinkovics et al., 2015; Weber & Schnell, 2003). Further, in extending the discussion on the effects of intermediation, De Silva et al. (2018) also posit how there exists positive externalities beyond financial value creation to aspects such as new knowledge base, networks among actors as well as capabilities of all parties. This forms a prominent characteristic feature of intermediation efforts, which primarily involves building groups, promoting leadership with a supportive learning environment. Lastly, the heterogeneity dimension of the urban consumers and the rural producers also create disparities in their engagement and practice due to the lack of shared values and norms and other social, institutional structures (Bhatt, 2021; Bapuji & Chrispal, 2020; Riaz & Qureshi, 2017). Bhatt et al. (2019) state how this can be bridged through iterative engagement between the actors to create value at the BoP. In this chapter, we aim to discern how these aspects of BoP shape social intermediation efforts and how sharing economy model addresses these challenges.

5.3 Method

5.3.1 Research Context

A qualitative study was conducted on Farmizen, one of the pioneering social enterprises in India, to understand social intermediation through sharing economy model. Farmizen is based in Bengaluru, in the southern Indian state of Karnataka. Since its inception, Farmizen has been at the forefront of utilising sharing economy models with the dual objective of providing urban food security along with sustainable livelihoods for marginal farmers. As per the World of Organic Agriculture Report of 2018, India was home to over 30% of all organic producers in the world cultivating in an area of more than 57.8 million hectares. However, as per an ASSOCHAM report of 2018, the sector was struggling with impediments such as rising input costs, limited market access, and policy paralysis. This is where Farmizen comes in. The organisation is presently well spread out primarily in the two cities of Bengaluru and Hyderabad with activities in other north Indian cities as well, serving thousands of customers through several farms.

5.3.1.1 Farmizen Model

The Farmizen model involves primarily connecting the marginal small landholder farmers from one end to the urban consumers at the other. It does this through the use of a digital stack of mobile applications. The consumer once enrolled into the programme can opt from any of the Farmizen models of procuring the produce, which offers over-the-counter service of delivering organic produce to growing produce partnering with a farmer on a 600 sq.ft. mini-farm in the peri-urban areas of the city. The applications help connect the two entities along with maintaining a checks and balances mechanism to ensure transparency and trust in the process. The harvest is delivered to the consumers in the city on a weekly basis through a learner supply chain. While the primary objectives of this engagement are twofold, as stated earlier, there exist several externalities to it. They include soil conservation using the multi-cropping method, providing knowledge transfer, building social capital between the urban and rural populace, among others. The system functions based on a prepaid subscription model, which unlike the conventional way, provides for input costs regardless of the productivity of that cycle. This helps ensure the farmers are provided with a more sustainable livelihood and income mechanism, which is stable and not precarious. The genesis of this initiative interestingly lies with the founders' exposure towards organic cultivation on the terrace and the lack of reliable organic produce in the market. The founders of Farmizen takes pride in how the organisation has successfully lived up to its dual objectives of improving livelihood conditions of farmers through providing access to healthy farm produce for the urban populace.

5.3.2 Research Methodology

As stated earlier, the study attempts to understand how a sharing economy model of business is used in the social intermediation process. This is explored using a case study (Eisenhardt, 1989; Yin, 2003) of Farmizen. It involved multiple iterations between data collection and analysis. Multiple unstructured interviews were conducted with the founders of Farmizen to gather information on its genesis and evolution. It helped us ascertain the nature of the actors and stakeholders involved, namely, the farmers, consumers, and the intermediary, that is, Farmizen. Further, the rich content available on Farmizen's social media platforms and external media outlets advanced our understanding of its functioning. This helped us triangulate the collected data for a better understanding (Yin, 2003). Various themes emerged out of this exercise which helped us advance the theoretical perspective.

5.4 Findings

Farmizen's aims to fill the urban organic food security void through a reliable and verifiable supply of organic produce directly to the consumers. In this process, it also aims to increase the income of the small landholding marginal farmer who collaborates with Farmizen where the farmer is taking care of the land, labour, watering, and supervision while Farmizen will support with the input technology, marketing, and logistics. The technology stack includes three mobile-based applications: one each for the consumer, the farmer, and the drivers in the supply chain. This ICT stack offers the consumers varied models for sourcing vegetables from partnering with a farmer to jointly grow vegetables called the Mini-Farm Model to sourcing vegetables at the community level through the Farmizen Tribes Model. There also exist other offshoots from these models, such as the Veggie Harvest Bundle, which provides customised weekly varieties of bundles of organic produce for the households. All the above-mentioned models rely on a subscription service costing around Rs. 2500 per month and the customers may choose to opt for either of the two models. There exist several features, including customisable aspects to these models and the produce is supplied to the consumer on a weekly basis. Broadly, this technology infrastructure caters to crop planning, tracking, workflow, and delivery optimisation. Of course, the data generated also provides information on crop growth and yield vis-à-vis the nutrients, weather and soil conditions, including adverse events and demand patterns.

We discuss some characteristics of Farmizen to show how it relies on the sharing economy model, which is characterised by a digital platform and the stack it deploys, access than ownership model, co-creation, and temporality of transactions between the consumer and the farmer. Further, we present how these characteristics and other features of Farmizen helps in the process of social intermediation in the BoP context. The intermediation-related findings include absorption of the market

and other risks, lowering of transaction costs through a leaner supply chain, improved livelihood and financial security of the farmer, and bridging other inefficiencies. It also states how social intermediation has helped Farmizen build social value at the BoP.

5.4.1 Sharing Economy Characteristics of the Farmizen Model

Arriving at social intermediation using digital platform as an alternative

The founders of Farmizen identified the problems of urban consumers and their ensuing preferences through a small-scale survey among members of their own circle. The results reflected the same issues faced by the founders in their own stint at sourcing organic produce with the majority of the respondents expressing concerns about the quality of the organic produce available in the market. The founders also interacted with other entities in the supply chain, and almost all agreed to how despite certification the organic food supply chain is leaky. Most of the people in the urban areas were keen on growing their own produce. Farmizen attempts to solve this time, space, and expertise problem through its digital platform.

> Also, there was this realisation that we needed a service that would enable working professionals and families, who lacked the space, time or expertise, to start farming in a small way [Shameek, Founder to Live Mint, 2018]
>
> In 2015, we started experimenting with growing our own food in our terrace garden, and we soon realised that there was not enough space. We also realised that growing your own food requires substantial effort and constant care and there was a gap in terms of expertise and knowledge about how to grow food. We started speaking to people, and found that many people, at least in Bengaluru, were in the same situation — they wanted to grow their own food but the lack of space, time and expertise were huge hindrances. That's when the idea of building an assisted remote kitchen gardening service like Farmizen started germinating, and we decided to pursue it as a full-time venture in January 2017 [Shameek, Founder to Deccan Chronicle, 2018]

The founders then engaged in setting up the platform and the next six months saw the formation of a robust technology stack of applications for end-to-end tracking of the farming process in a direct-to-home delivery model. Broadly, this platform was envisaged as a social intermediary which can connect the farmers with the consumers, thereby ensuring a steady supply of organic produce of the latter's choice which will be maintained by the farming community. This was a win-win mechanism for both the stakeholders, serving the twin objectives of ensuring urban nutritional support along with mitigating farmers' woes.

5.4.1.1 Digital Stack of Farmizen

Farmizen's technology stack includes three mobile-based applications-: one each for the consumer, the farmer, and the drivers in the supply chain. While the applications for the consumer and the driver operates on Android as well as iOS, the one for

the farmer is available only on Android platform. Broadly, this technology infrastructure caters to crop planning, tracking, workflow, and delivery optimisation. Of course, the data generated also provides information on crop growth and yield vis-à-vis the nutrients, weather and soil conditions, including adverse events and demand patterns.

> Technology will play a very important role in transforming agriculture in India. The core of the platform is the Farmizen brain, which understands planting regimen for various crops and is able to orchestrate the entire process, and recommend actions to farmers based on real-time inputs from the field as well pre-defined schedules for over 50 different types of crops [Sudakeeran, Founder to Your Story, 2018]

Farmizen is an intermediary platform (Cohen, 2000; Hamari et al., 2016) and functions by offering features through its platforms that are specific to the users. These features are expected to facilitate transactions with the consumer and the farmer by connecting them for information exchange on preferences, verification mechanism and feedback options. While the consumers get a plethora of customisation options through crop planning and the like, the farmers get information at their fingertips in vernacular languages and with pictorial representations. The platform caters to a diverse contextual requirement and accommodates inefficiencies and incapacities at the bottom of the pyramid through these features (cf Bhatt et al., 2021; Pandey et al., 2021; Pillai et al., 2021). Thus, it builds a symbiotic relationship between the farming community and the urban consumers by facilitating sustained interaction, ensuring checks and balances, supply chain management, knowledge sharing, and even barter between the consumers within a farm community.

5.4.1.2 Providing Access Without Ownership

Based on the feedback, the founders received from their social circles, they realised there were many discontented urban working consumers who were willing to grow their own produce to ensure sustained access to healthy organic produce for their families, as opposed to market-supplied pesticide-ridden produce. However, the same was not considered practical, given the lack of easy access to land resources and time along with having no expertise in the field. Farmizen has been able to build this bridge by providing access and resources to the urban populace without having to own or maintain the farmlands and yet ensure sustained access to healthy organic produce through a transparent and participatory process (Bardhi & Eckhardt, 2012; Bhatt, 2017; Belk, 2010; Cohen, 2000).

> Many subscribers come to the farm to work with farmers, sow seeds or prepare fertilisers, and volunteer labour. Families come to have a picnic also. This model allows them to do this whenever they want, without the liability of owning and maintaining a plot [Shameek, Founder to VCircle, 2017]

5.4.1.3 Co-creation by Consumers

The Farmizen model and specifically the Mini-Farm Model is structured in a way that encourages collaboration between the marginal farmers and the urban consumers with cleverly assigned roles. Based on their interactions with the consumers on online platforms, the farmers ensure the upkeep of the farm beds based on the preferences of the consumer. The digital interactions are taken further with visits by the consumers to the farms and taking part in the farming process (Freire, 2005). While the farmers share their expertise with the consumers, the consumers in turn also share knowledge acquired from elsewhere, facilitating the adoption of best practices by building synergy with the farmer. The consumers are not bound by the list of options mentioned in the Farmizen application and are free to choose items outside the scope of Farmizen even though it is not encouraged as it could be detrimental to the environment.

> Those renting these mini-farms are free to visit their farms, help in planting seeds in nurseries or even participate in preparing humus for their farms. However, we understand that the urban working class has little time to attend their farms on a daily basis. So, they have the option of paying weekly visits while we along with the real farmers take care of the crops through the week, [Shameek, Founder to Enewsroom, 2018]

5.4.1.4 Temporality of Access

Even though the minimum subscription period for Farmizen is only a month with four ensuing deliveries of organic produce, it encourages more longitudinal access to the service as it relies on factors of trust and transparency. Farmizen almost completely relies on word of mouth for publicity and new enrolments, nudging the consumers with the incentive to enrol for the long term. However, the same does not ensure sustained participation from the side of the consumer. As per the founders, only 20% actually visit the farms despite repeated encouragements and resort to a more service-oriented model where they restrict themselves to just sourcing the produce through the application with models such as Farmizen Tribes and preferring to stay dormant.

> People are interested because there is an awareness around eating organic and the benefits of spending time amidst nature. Their involvement in the farm is completely up to them. While some visit the farm thrice a week, 20 per cent of our subscribers visit once a week. [Shameek, Founder to Pune Mirror, 2019]

They also state how the ones who visit the farms frequently tend to stay longer in the Farmizen programme through serial usage. The increased frequency of visits helps not just in building a perceived sense of ownership (Strahilevitz & Loewenstein, 1998) but also in maintaining a crowd-sourced checks and balances mechanism. One consumer visiting the farm, sometimes, also provides an update on the progress on the neighbouring farm beds to members in the chat groups. This provides them with further opportunities to visibly exercise control over what they can produce,

how to produce and ensure better knowledge sharing with the partner, that is, the farmer. Thus, investing themselves heavily in the process and with objects, they do not own but mediate through technology (Belk, 2014; Pierce et al., 2001).

5.4.2 Social Intermediation Using the Sharing Economy Model

5.4.2.1 Lowering of Transaction Costs

Farmizen relies completely on a farm to fork model of the transaction between the farmers and the consumers, and the business model involves collaborating with farms and small landholder marginal farmers at the periphery of urban areas. These peri-urban farms are located in around 25–30 km from the core city area, and the consumers are free to choose the farm closest to them. This proximity ensures a leaner supply chain negating the need for extensive and expensive storage infrastructure for these perishable produces (Qiu et al., 2021). This design forms the core of the Farmizen cost structure. The consumers place their order the previous day, and the produce which is harvested generally in the morn is delivered to the respective consumer in a short span of time. While this holds true for both the Mini-Farm as well as the Farmizen Tribes model, the Tribes model goes a step further in shared logistics. As per its design, the model promotes group purchasing where delivery is made to the leader of the group (Tribe), who in turn volunteers to ensure the deliveries or collection of the weekly produce for the other members of the group (Qiu et al., 2021). For purposes of convenience, the farms are identified based on the postal pin codes, and deliveries are made by the delivery personnel using their respective application, which helps them chart out the shortest routes to their nodal points. This again adds positively to the cost structure reducing the transaction costs associated with the supply chain considerably.

5.4.2.2 Risk Mitigation

Farmizen offers a pioneering solution to the precarious nature of farming in India, ensuring a sustainable and steady income stream for the small and marginal farmers. The Indian farming sector is prone to the vagaries of nature and is dependent on the east-west monsoons for irrigation purposes. This is exacerbated by the lack of soil nutrition along with lack of access of soil testing facilities and data on risk modelling. Farmizen bridges this gap through a prepaid subscription model, which requires the consumer to pay out INR 2500 on a monthly basis irrespective of the productivity of the farm. This payment is assessed based on the input costs required for the farming process as opposed to the output-oriented pricing structure prevalent in the country.

> Farmers invest a lot to grow tomatoes, but if the prices crash to, say, Rs 5 per kg, they don't even bother bearing the cost of travel and throw the produce. There is so much price uncertainty that farmers lose money even if the crop doesn't fail. Our model corrects this equation, as the price risk is borne by the consumer [Shameek, Founder to VCircle, 2017]

In this manner, the farmers possess a steady income stream that is devoid of any other conditions, and this provides them the incentive to invest themselves judiciously into more sustainable farming methods and adoption of best practices. Farmizen will take the responsibility of non-core areas such as marketing, supply chain, and the like while the farmers can engage in their core activity of the farming process.

> Indian farmers have been receiving the short end of the stick for too long — they take all the risks in getting our food to us, and very often lose money when prices drop, or when there is some problem in the supply chain. In the Farmizen model, they are de-risked because of the monthly subscription. They can focus on production, while leaving complexities of marketing, distribution, agri-input sourcing, etc. to Farmizen. [Shameek, Founder to Deccan Chronicle, 2018]

5.4.2.3 Rise in Income Level

The Farmizen model, through its subscription model, has ensured a monthly income to the producers which is shared between the intermediary and the producers at a base level of 50:50 ratio. There are cases where this is altered based on the farmer availing more services from the intermediary, such as access to heavy agricultural equipment and the like. While conventions says that we pay for the output we receive in the agricultural product, Farmizen designed the subscription model, ensuring the prepaid model is input-based and is not subject to any productivity-related conditions. As stated earlier, this allows the farmer to actively engage in the farming process in a sustainable manner. The assured income to farmers, according to Farmizen, is over three to five times more than their regular income, and several farmers have utilised the income security and knowledge transfer to scale up in their activity beyond Farmizen.

> Farmers benefit owing to predictable and increased income. Most of our partner farmers make 3–5X more money than before, and also get paid every month, without having to wait for the end of a crop cycle. In our model, farmers can focus on their core competence – production, while Farmizen takes care of the rest – marketing, technology, logistics, agri-inputs, crop advisory etc. [Shameek, Founder to GetBengal, 2018]

5.4.2.4 Beyond Economic Value

The social intermediary services provided by Farmizen reflects all the definitional aspect of the social intermediation function. Interestingly, it goes further and helps create social value as well. The model encourages extensive interaction between the farmers and the consumers. The chat groups at the farm level help build interaction

between the consumers and farmers; however, as the farmers may not be well versed with the English language, they may find it difficult to interact over the digital medium. This is significantly compensated for by Farmizen by encouraging the consumers to make farm visits at a time of their convenience and has even instituted a work-share arrangement, which has proved to be an incentive. Under the 'work-share' programme, subscribers have the option to take up a day of work (8 h) at a listed farm and are provided with one week's subscription entitling one delivery of produce in return. This model ensures the farmers also get easy and cheaper access to labourers. To enrol, a subscriber will have to email and notify Farmizen atleast two days in advance and book a slot based on availability. The consumer may visit the farm with or without his friends or family; however, only one person's effort will be counted into the work hours. There is also an option to do the tasks in two shifts of 4 h credits each, and the work will not be limited to one's own farm but across the field. They work under the direct supervision of the farmer, and their continuation is subject to farmers' satisfaction. The process is managed by the host, and a register is maintained for the purpose.

Further, Farmizen also engages in promoting the farmers as partners rather than a service provider for the consumer. This helps build synergies between the consumer and the farming community.

> The only pleasure greater than growing organic food on your own land is the knowledge that we are helping others do the same. You should see the place on a Saturday. The farm is packed with people, including children [Manjunatha N., Farmer to Business Standard, 2019]

The visits to farms by consumers stem from varied objectives, with some wanting to instil a sense of conventional agriculture-related social values to the children in their family, others wish to build and share expertise in the farming process enabling a knowledge sharing process, and some among the farmers want to provide healthy organic produce to the masses for personal satisfaction. This goes beyond the improved economic value generated in the process, and the process takes a more profound role in community building with joint production of organic produce. 'Responsible production and consumption' and 'good health and well-being', among others, incidentally form part of the Sustainable Development Goals as well (Shalini et al., 2021).

5.5 Discussion

The BoP markets in India are characterised by various market inefficiencies that hamper value creation. In addition, due to institutional voids, the unscrupulous commercial intermediaries capture any value created by the BoP producers (Keys, 2005; Kistruck et al., 2013; Rust & Hall, 2003). In order to provide BoP produce a fair share of value created by them, social intermediaries create market linkages to mitigate these constraints (Estrin et al., 2013; Kistruck et al., 2013). Extant literature shows evidence of how several new innovative models of business have evolved

in the past two decades that are relevant for BoP contexts. Social enterprises and other organisations have judiciously deployed innovative solutions to achieve their financial and social objectives, and the sharing economy has caught up as a potential model (Qureshi et al., 2021c). Many sharing economy models leverage a digital platform to achieve scale and scope (Benkler, 2004; Srnicek, 2017) and a plausible solution that facilitates value creation (Parthiban et al., 2021). Increasing access to the Internet and its round the clock availability to the BoP population in many cases have helped digital platform scale up the sharing model, thereby reducing transaction costs (Benkler, 2004; Hira & Reilly, 2017).

The Farmizen case demonstrates a successful deployment of sharing economy model in the process of social intermediation with the sharing economy model. In this regard, the findings of this study shed light on the conditions and characteristics under which the sharing economy model facilitated social intermediation at the BoP. The digital stack of tailor-made mobile applications has helped achieve the objectives of Farmizen, which is to secure urban food security using a supply of organic produce and simultaneously providing a stable livelihood option through underutilised land assets and expertise of the marginalised farmers. The organisation has successfully provided access to varied types of customers who, on the one side, prefer to grow their own produce using the Mini-Farm models and on the other, by just procuring the product over the counter. While prima facie these are driven by the need for healthy and verifiable organic produce, it reflects a more profound desire for transformation to shift towards a more sustainable and democratic food procurement mechanism. It simultaneously attempts to commodify the landholdings of the small landholder farmer in the peri-urban areas to generate sustained value through the process (Loh & Agyeman, 2019). While the intermediation efforts, as stated earlier, helped to achieve the dual objectives, urban food security and stable livelihoods, there were some additional socialisation benefits of the close interaction between the farmers' and consumers' group through the digital platform (cf. Qureshi & Fang, 2011; Qureshi et al., 2018a). Sustained engagement with the actors, through the chat groups and other media coupled with workshops and in hand experiential engagements in the farms between the farmers and the urban consumers, led to building up social capital in the networks (Bhatt, 2017; cf. Qureshi et al., 2016). Enhanced familiarity and trust over iterative engagements and knowledge sharing contributed to the value creation in both social and economic terms. Barraket (2019) calls these the 'spillover effects' of intermediation processes. The purposeful engagement of actors and the emergence of multi-actor relationships helped increase the reach as well as the capabilities of the field for Farmizen as well as other stakeholders. In a similar vein, Shalini et al. (2021) observe how aspects like knowledge sharing and its preservation by digital applications ensure sustained usage of such platforms helping build not just social capital but also responsible consumption behaviour. Further, temporality aspects, such as duration and frequency of interaction between the farmers and consumers, is critical for sustained engagement with the technology platform. In an access-based platform model, building a sense of ownership is pertinent to sustaining participation that helps build social capital in the long run (Strahilevitz & Loewenstein, 1998). These spillover

effects shed light on how social intermediation efforts enabled by sharing economy models result in the creation of an unintended yet positive impact on the value creation process. Thus, findings of this study contribute to the social intermediation literature in a significant way by highlighting that sharing economy models can not only facilitate the process of social intermediation but also amplify its impact through 'spillover effects' of the social intermediation (Barraket, 2019; Kistruck et al., 2013).

In the extant literature, the high centralisation of control and organisation of access platforms have been identified as salient characteristics of the conventional sharing economy models such as carpooling (Bardhi & Eckhardt, 2012; Lamberton & Rose, 2012). However, the findings with regard to Farmizen reveal another perspective. Examples such as how the consumer possesses primary discretion when it comes to farming decisions and the role of the intermediary being restricted to an advisory role suggest decentralisation of control over some of the factors of production. The decentralisation of control offered by Farmizen's sharing economy model extends to consumer's freedom to engage in production choices outside of the Farmizen's advisory ambit. Such decentralisation is also evidenced in the community control exercised by the chat groups at the farm level. The decentralised and democratic organisation structure allows sharing best practices in addition to engaging in censuring other consumers who do not follow established sustainable norms (Sundararajan, 2017), which help promote responsible consumption. Thus, the findings of this study contribute to the sharing economy literature by highlighting how sharing economy models configured for social intermediation are different from the conventional sharing economy models in terms of their organisational structure and control. A sharing economy model that aims to enable social intermediation process employs decentralised and democratic structure (Parthiban et al., 2020; Sundararajan, 2017).

Further, research in the domain of community-supported agriculture shows how agricultural producers partnering with end-users promote value co-creation and help mitigate risks of the involved parties. Literature also sheds light on how such models help build sustainable income sources for the marginalised producers by providing access to healthy farm produce for the end users (Thompson & Coskuner-Balli, 2007). Farmizen demonstrates the same through its model. Thus, findings of this study contribute to this stream of literature by emphasising the role of sharing economy model in the process of value co-creation by clubbing the tool of digital platforms with that of the resultant social networks of farmers and consumers, where the emerged network reinforces the efficacy of the digital platform.

However, it is worthwhile to note that, as such, the platform solutions do not mitigate the constraints of information asymmetry and moral hazard, among others completely. It is the process of social intermediation in the BoP that helps bridge these micro-level impediments considerably. Thus, when sharing economy models are designed taking the process and aim of social intermediation into consideration, as the case of Farmizen highlights, they could help generate more value for all the participants in the model. Thus, the findings of this study provide important practical insights to social enterprises on how to leverage the sharing economy model in

the process of social intermediation. Moreover, this study informs practitioners by explaining how the sharing economy model facilitates intermediation in the BoP context.

5.6 Conclusion and Future Research Directions

The study explores the case of a social intermediary that leverages sharing economy model in the Indian BoP. However, the theoretical underpinnings of the sharing economy rest on studying aggregator and technology-enabled models in more developed markets. A more contextual understanding is necessary to problematise these theories, given the heterogeneity reflected in the BoP (Bhatt, 2021). The limited literature on the BoP is also skewed towards BoP consumers. This chapter attempts to address these concerns. However, more work is imperative to develop a comprehensive understanding of market formation in the BoP. We encourage future research to conduct in-depth case studies (using field observations) of sharing economy models in the BoP to enrich theory and practice.

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