THESIS TITLE: ESSAYS ON DIGITAL SOCIAL INNOVATIONS FOR RURAL DEVELOPMENT

Candidate Name: Rishikesan Parthiban (FP/13/15), MIS Group, IIM Calcutta

Thesis Advisory Committee:
TAC Chair: Prof. Somprakash Bandyopadhyay (IIM-C)
Members: Prof. Ramendra Singh (IIM-C), Prof. Saravana Jaikumar (IIM-C) and
Prof. Israr Qureshi (Member, ANU)

ABSTRACT

Rural development can be understood as the process of enhancing people's quality of life in the rural regions along the economic, social, cultural and political dimensions (Desai, 1987; Singh, Pandey, & Goswami, 2018). It attempts to address people's pressing issues in the rural regions and remains at the core of overall development in India (Singh, Pandey, & Goswami, 2018). While early approaches to rural development were synonymous with agricultural development, scholars suggested the need to investigate other rural problem domains in order to do justice to the plurality of rural life and unleash the full potential of people in the rural regions (Haggblade, Hazell, & Reardon, 2010). In response, researchers have inquired into problem domains like the cottage industry, forestry, fishing, education, infrastructure, among others. Such interventions were enacted by different actors like policymakers, NGOs, NPOs, social enterprises, private sector and individuals (Mohanty, 2020).

While significant results have been achieved over the years like improved access to education, improved attention to craftwork through geographical indication tags, among other things, research suggests that there is still a lot left to be done to bridge the rural-urban divide in India (Mohanty, 2020). In this regard, scholars discuss the limitations associated with social innovations and digital innovations and then highlight the requirement for a hybrid approach to solve rural development problems (James, Kriss, & Dale, 2008). Hence, we explore the emerging concept of digital social innovations (DSI) that attempts to achieve a balance between using the power of digital technologies, with the need to embed them in a contextually entrenched manner, so that it would be locally useful to the communities (Qureshi, Pan, & Zheng, 2018).

DSI is defined as the design, development and deployment of innovative products, services and other activities in which digital technologies play an important role and are aimed at improving the well-being of disadvantaged groups or are aimed to address social issues concerning inequality, social exclusion and marginality (Qureshi, Pan, & Zheng, 2018). In this thesis, we study DSIs in the context of the rural artisan industry and rural education. We first problematize the context of rural education and rural artisan industry and thereby motivate the need for DSI based approaches. In the context of rural education, building from the literature, we synthesize the problems associated with the rural education ecosystem into five pillars, namely, environment, subject-matter, processual technique, student and learning outcomes (Dey, 2020; UNICEF, 2007). Subsequently, we leverage the theoretical lens of market separations developed by Bartels (1968) to synthesize the market development issues

faced by the artisans, where we explicate the spatial, temporal, informational, financial, capability and capacity separations.

Using DSI as the conceptual foundation, the research objectives in this thesis are two-fold: i) to understand the mechanisms through which DSIs enable development in the quality of education for rural children and livelihood enhancement for artisans and ii) understand the role of digital social intermediaries[1] in enabling DSIs in this context. To achieve this, we inquire into the DSIs by a digital social intermediary over a prolonged period of over twenty-four months (using both qualitative and quantitative research designs) in the context of rural education and rural artisan industry. The data collection effort in the context of rural education involves a case study approach, wherein we study CommunityLink's (a pseudonym for a social entrepreneurial venture) DSI based interventions in the rural education space in West Bengal, India. We rely on participant observations, semi-structured interviews, field notes and archival data, collected over thirty-one months.

In the context of the artisanal industry, we conduct two studies. The first study is a preliminary investigation using a survey design with three groups of rural base of the pyramid (BoP) artisanal women (N=135): 1) group C1-women had no smartphones, 2) group T1-women had their own smartphones and 3) group T2-who received smartphones and digital social intermediary support over two years. We collect data using a survey instrument developed through items in the literature. The second study involves a more in-depth inquiry into the artisan industry through a case study approach. We study the case of CommunityLink and conduct online and offline participant observations, semi-structured interviews and gather different forms of archival data over twenty-four months.

Our findings in the context of rural education revealed how CommunityLink's DSI leveraged the 'complementarities' between the two institutional voids[2] present in its context in order to fill each void with the help of the other. Specifically, we find how CommunityLink used the dormant knowledge capital of the urban elderly (retired citizens) that is often ignored by the society, to provide holistic education to the rural children from the marginalized communities. We also find how CommunityLink employed an ICT based platform to connect the two communities and overcome the issue of physical distance. Further, in our findings, we elucidate CommunityLink's ICT centred institutional work that was performed to overcome various institutional challenges it had faced. Building on these findings, we theorize the concept of complementary voids and outline the theoretical dimensions of institutional work that may enhance the success of ICT based interventions in these contexts.

Subsequently, our preliminary inquiry using a survey design with rural BoP artisanal women suggests how access to community technologies (e.g. public Wi-Fi) may be difficult for them due to the gendered public spaces in rural regions (Mudliar, 2018). We find that access to consumer technologies (CTs) like smartphones may be the means through which such rural BoP women may be able to access the digital world (Mudliar, 2018; Venkatesh, Tho, & Xu, 2012). We demonstrate how access to CTs can enhance their socio-economic well-being

---

[1] Digital social intermediaries are agents who use ICTs as central tools to enable buyers and sellers of a product/service complete a market transaction through different supporting activities, wherein they are willing to even accept monetary losses if the disadvantaged party (e.g. poor farmers) in the transaction can make monetary or other gains (Kistruck et al., 2013). Additionally, digital social intermediaries also leverage ICTs to address social issues beyond market transactions like gender equality, caste barriers, sanitation, and issues related to marginalization, among other things (Mair et al., 2016). They can be organized as NGOs, NPOs, social enterprises, government or even individuals.

[2] Institutional voids are the lack of formal institutions/presence of conflicting institutions that are required for the effective functioning of markets (Mair et al. 2012)

through increased structural social capital (SSC), freedom of movement and entrepreneurial intent (Gigler, 2011). We then demonstrate how interventions by a digital social intermediary could further enhance the impacts of access to CTs. We also suggest that infrastructural elements like access to roads may deter the impact of access to CTs on the entrepreneurial intention of rural BoP women.

We then conduct a deeper inquiry into the artisan industry over a prolonged period using a case study approach wherein we study CommunityLink. Our findings revealed that the DSI by CommunityLink enabled ICT-mediated value co-creation between rural artisans and urban micro-entrepreneurs that enhanced value-added to the craft products. Specifically, we find that value is added through 'awareness creation' and 'repeated engagements'. Further, we find that the impact of value addition to craft products through the above two dimensions depended on the complexity of the product co-created. We suggest that the awareness dimension is most useful when the complexity of the product co-created is low, while repeated engagement is most helpful when the complexity of the product co-created is medium.

Building on our study, we use the lens of value co-creation to suggest how awareness creation and repeated engagements act as two dimensions that enable ICT-mediated value creation in the artisan industry context. Further, we provide two propositions on the impact of the identified dimensions on value creation. We then leverage theories on media richness (Carlson & Zmud, 1999) to contribute to theory-building by outlining a conceptualization of ICT mediated joint value creation for spatially separated actors. In this thesis, we also highlight the pivotal role played by digital social intermediaries in driving DSIs and make contributions to the DSI and social intermediation literature (Kistruck et al., 2013) by unearthing the key activities conducted by them in the context of rural development.

Building on the findings from this thesis, we also provide contributions to policy and practice. We then outline our limitations and then advance some directions for future research. Finally, we urge the information systems scholars to extend the work in this thesis on DSI and leverage under-used theoretical lenses like institutional work (Lawrence et al. 2009), to explore resource-constrained contexts which are rarely considered but widely prevalent in the world, to provide important theoretical and practical contributions.

References

Bartels, R. (1968). The General Theory of Marketing. *Journal of Marketing*, *32*(1), 29–33.
Carlson, J. R., & Zmud, R. W. (1999). Channel Expansion Theory and the Experiential Nature of Media Richness Perceptions Author (s): John R . Carlson and Robert W . Zmud Source : *Academy of Management Journal*, *42*(2), 153–170.
Desai, A. R. (1987). Rural Development and Human Rights in Independent India. *Economic and Political Weekly*, *22*(31), 1291–1296.
Dey, P. (2020). *Information and Communication Technology in Primary Education: A Study in West Bengal*. PhD Thesis. Jadavpur University, Kolkata.
Gigler, B. S. (2011). Informational capabilities-the missing link for the impact of ICT on development. Available at SSRN 2191594., 1-36
Haggblade, S., Hazell, P., & Reardon, T. (2010). The Rural Non-farm Economy: Prospects for Growth and Poverty Reduction. World Development, 38(10), 1429–1441.
James, P., Kriss, D., & Dale, M. (2008). Rediscovering Social Innovation. *Stanford Social Innovation Review*, *6*(4), 34–43.

Kistruck, G. M., Beamish, P. W., Qureshi, I., & Sutter, C. J. (2013). Social Intermediation in Base-of-the-Pyramid Markets. *Journal of Management Studies*, *50*(1), 31–66.

Lawrence, T. B., Suddaby, R., & Leca, B. (2009). Introduction: Theorizing and studying institutional work. In *Institutional Work: Actors and Agency in the studies of organizations*. New York: Cambridge University Press.

Mair, J., Marti, I., & Ventresca, M. J. (2012). Building Inclusive Markets in Rural Bangladesh : How Intermediaries Work Institutional Voids. Academy of Management Journal, 55(4), 819–850.

Mair, J., Wolf, M., & Seelos, C. (2016). Scaffolding: A process of transforming patterns of inequality in small-scale societies. *Academy of Management Journal*, *59*(6), 2021–2044.

Mohanty, P. C. (2020). Is India Digitally Divided? Identifying the Determinants of ICT Diffusion at the Household Level. In *Digitalisation and Development*. Springer Singapore., 265–286

Mudliar, P. (2018). Public WiFi is for Men and Mobile Internet is for Women. *Proceedings of the ACM on Human-Computer Interaction*, *2*(CSCW), 1–24.

Qureshi, I., Pan, S. L., & Zheng, Y. (2018). *Digital Social Innovation*. Retrieved from https://onlinelibrary.wiley.com/pb-assets/assets/13652575/Digital%20Social%20Innovation%20update%20100818-1533909662127.pdf

Singh, S. K., Pandey, P. K., & Goswami, D. K. (2018). *Rural Development of India*. Publications, Bharti.

UNICEF. (2007). *A Human Rights-Based Approach to Education for All*. *Practice*. UNICEF. Retrieved from https://www.unicef.org/publications/files/A_Human_Rights_Based_Approach_to_Education_for_All.pdf

Venkatesh, V., Tho, J. Y. L., & Xu, X. (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly*, *24*, *No. 2*(1), 245–276.