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Empirical analysis of social impacts of a rural social enterprise: insights for local and regional development

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ABSTRACT

In developing countries the most marginalised and disadvantaged people are in rural, remote and regional areas and social enterprises in these areas – rural social enterprises (RSEs) – have been identified as key development actors in this context. However, their impacts are rarely rigorously measured. Our study fills this gap by measuring an RSE's social impact in a developing country. A smallholder farmers' survey ($n = 1021$) is utilised in a propensity score-based method which allowed us to generate counterfactual and estimate outcomes between members and non-members of an RSE. This method was complemented by a stakeholder focus group discussion. Predictors of participation and social impacts of the RSE are identified besides an evaluation of its interventions. Results generate implications for social enterprise practitioners, supporters and policymakers interested in applying RSEs as local and regional development actors as well as researchers involved in social impact measurement.

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1. INTRODUCTION

The market-based approaches that social enterprises take to social problems have appeal for local and regional development (Barraket et al., 2019; Eversole et al., 2014; Haugh, 2005; Kim et al., 2017; Pike et al., 2016). Some intractable challenges such as poverty and inequality (Breau & Saillant, 2016; Giannakis & Bruggeman, 2020; Ward & Brown, 2009; World Bank, 2021) are disproportionately faced in rural areas, which are home to 44% of the world's population: 66% in developing countries (World Bank, 2021). Rural populations face social specificities of small communities (Buratti et al., 2022), outmigration related to population drain

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which in turn is linked to a loss of human resources, uncertainty over the negative impacts of climate change, loss of biodiversity, natural resource conflicts, pollution of the environment, insufficiency of public services (e.g., health and welfare services, education facilities and infrastructure (such as poor energy access and high costs if accessible)), etc. (Gupta et al., 2020; Morrison et al., 2014; Musinguzi, Larder, & Baker, 2022a; Steiner et al., 2021; Steiner & Teasdale, 2019; Steinerowski & Steinerowska-Streb, 2012).

However, development action in rural areas faces inadequate resources and service supply (Clausen, 2020; Farmer et al., 2008; Norris, 2020; O'Shaughnessy et al., 2011, 2023; Steiner et al., 2021; Steiner & Teasdale, 2019; Steinerowski & Steinerowska-Streb, 2012) because development actors – the private sector and governments – find rural areas relatively unattractive. Unsurprisingly, geography has been central in decision making of firms (e.g., Clausen, 2020) and there is an urban/regional firm performance divide (Clausen, 2020; Dabson, 2020; OECD, 2020; Pett et al., 2021). Indeed, economic geography identifies spatial factors particularly the rural/regional context as presenting disincentives for rural enterprises e.g., lack of skilled personnel, small markets and longer distances to larger markets, increased transport and communication costs, inadequate raw materials (e.g., Clausen, 2020; Musinguzi et al., 2023a; Steinerowski & Steinerowska-Streb, 2012) causing a failure of many rural enterprises (e.g., Abebe & Gebremariam, 2021; Gyimah & Lussier, 2021).

Beyond these geography-oriented challenges, generally, social enterprises face many challenges that emanate from their nature – being social mission oriented business organisations (Abramson & Billings, 2019; Battilana et al., 2015; Bojica & Martínez-Del-Río, 2023; Haigh et al., 2015; Santos et al., 2015). These challenges include among others: insufficient financial support or poor access to financing (Abedin et al., 2021; Abramson & Billings, 2019; Battilana & Lee, 2014; Davies et al., 2019; Kalkis et al., 2021); vagueness of the regulatory environment in most countries linked to a lack of understanding of the social enterprise phenomenon (Abedin et al., 2021; Abramson & Billings, 2019; Davies et al., 2019; Kalkis et al., 2021; Musinguzi et al., 2023a, 2023c; Navarrete Moreno & Agapitova, 2017a) including the country in which our study was conducted where there is no recognised legal form for social enterprises (e.g., Musinguzi et al., 2023c; Navarrete Moreno & Agapitova, 2017b; Tamale et al., 2020; Turyakira et al., 2021); difficulty marketing their products (Abramson & Billings, 2019; Davies et al., 2019; Kalkis et al., 2021; Prabhakar, 2023); human resource constraints (e.g., Diaz Gonzalez & Dentchev, 2021; Sharir & Lerner, 2006) including lack of professional management (Certo & Miller, 2008; Diaz Gonzalez & Dentchev, 2021; Mirvis & Googins, 2018). This lack of professional management is linked to the low capacity of social entrepreneurs including lack of adequate understanding of e.g., dealing with and/or approaching potential investors (Abramson & Billings, 2019; Davies et al., 2019; Kalkis et al., 2021). The lack of professional management including tools and expertise is even worse in the sub-Saharan Africa context (that includes our study's country location) business environment and is attributed to general low levels of education (Bosma et al., 2016) among other factors. These challenges are exacerbated in the rural context and more so in sub-Saharan Africa and particularly in our studied country (see Musinguzi et al., 2023c, pp. 4–5) as they apply to social enterprises that are rural, remote or regionally focused[1] – rural social enterprises, RSEs, hereafter.

Given the above challenges, it is not surprising that there are calls for a rural/local and regional development focus in regional studies, regional science related research (Barca et al., 2012; de Souza, 2019; Harrison et al., 2019; Martin, 2021; Pike et al., 2016; van Leeuwen, 2019) and social entrepreneurship studies (Muñoz, 2010; Steiner et al., 2019; Weerakoon, 2021). Based on Pike et al.'s (2016, p. 53) local and regional development conceptual underpinning, we treat RSEs as local and regional development interventions which are part of 'place-based' approaches vital for communities and regions' development (Horlings, 2015). Barca et al. (2012) remark that 'the place-based approach is an alternative development pathway' that requires 'attention to detail and the institutional context' (Boyd & Spencer, 2022;

Marc, 2018; Spencer et al., 2018). Roy (2021, p. 272) further urges that social enterprises are an 'intelligent, efficient, sustainable and place-based approach' for wellbeing economy initiatives i.e., social entrepreneurial organisations concerned with achieving wellbeing. The place-based nature of poverty and inequality has prompted a geographical focus for social entrepreneurship studies (Muñoz, 2010), specifically for rural, remote and regional areas (Olmedo et al., 2021; Steiner et al., 2019; Steiner & Teasdale, 2019; van Twuijver et al., 2020) to unravel RSEs' social impacts (e.g., Musinguzi et al., 2023b).

However, in social entrepreneurship to date as Bacq et al. (2021) note, few studies examine the social impacts of social enterprises to identify which solutions work/do not work and in what contexts while Chalmers (2021) suggests a focus on social enterprises' impacts, efficacy and sustainability. Social impacts and their measurement in social entrepreneurship remain under-developed (Hertel et al., 2020; Rawhouser et al., 2019) including in RSEs (Musinguzi et al., 2023b). Most studies of social entrepreneurship are qualitative (Musinguzi et al., 2023b; Short et al., 2009), offer a potential bias towards 'success story' narratives[2] Amin et al. 2002; Dees et al., 2008, cited in Muñoz, 2010), are mostly from developed countries (Rawhouser et al., 2019; Short et al., 2009) and focus less on smallholders (Doherty & Kittipanya-Ngam, 2021).

We aim to close some of these gaps. We evaluate empirically the social impacts of a developing country RSE on its smallholder farmer beneficiaries, henceforward, smallholders and identify factors affecting beneficiaries' participation. We apply mixed methods and identify aspects of the RSE interventions' development approaches that influence effectiveness, and sustainability of impacts. We contribute to evidence-based guidance on effectiveness of local and regional development interventions and offer advice for promoting participation by potential beneficiaries. We contribute to both regional studies and regional science related research, particularly local and regional development literature, as well as to social entrepreneurship particularly the emerging rural social entrepreneurship literature.

The rest of the paper is structured as follows: Section 2 reviews key literature on social impact and its measurement. Section 3 presents the rationale of the study and elaborates the methods: a focus group discussion of RSE stakeholders followed by a household survey analysed using propensity score matching. Section 4 presents results which are discussed in Section 5.

2. DEFINING SOCIAL IMPACT AND ITS MEASUREMENT CHALLENGES

Social impact is 'the most relevant dependent variable' related to the performance of social enterprises (Hertel et al., 2020; Musinguzi et al., 2021; Rawhouser et al., 2019). However, its measurement faces definitional inconsistencies (Hertel et al., 2020; Musinguzi et al., 2021; Rawhouser et al., 2019). Social impact measurement 'means different things to different people', but in practice, its main purpose is supporting decisions which 'help increase the well-being of those affected' (OECD, 2021, p. 46). Its measurement thus requires consideration of 'the effects achieved by others (alternative attribution), those that would have happened anyway (deadweight), potential negative consequences (displacement), and sustainability over time (drop-off)' (OECD, 2021, p. 28).

In measuring social impacts, the logic model/theory of change is receiving attention in the literatures of management, and social entrepreneurship (Hertel et al., 2020; Musinguzi et al., 2021). It is noted to facilitate measurement of social impacts by offering conceptual clarity for relevant indicators, and cause-and-effect pathways for analysis (Musinguzi et al., 2021; OECD, 2021).

In the absence of random controlled trials, quasi-experimental designs have been suggested (OECD, 2021), including matching techniques such as propensity score matching[3] or difference in difference[4] that enable attribution (Li, 2013; Musinguzi et al., 2021). However, they are not commonly applied in social entrepreneurship as compared to qualitative techniques

e.g., realist evaluation (Caló et al., 2021; Musinguzi et al., 2021; OECD, 2021). Mixed method approach is widely recommended for social impact measurement (Caló et al., 2021; Musinguzi et al., 2021, 2023b; OECD, 2021) to allow 'determination of the extent of the change, while also understanding the reasons and conditions of how it was achieved' (OECD, 2021, p. 46).

Besides definitional inconsistencies, measuring social impacts is still a challenge for many social enterprises (e.g., Abedin et al., 2021; Abramson & Billings, 2019; Musinguzi et al., 2023b; Prabhakar, 2023). This emanates from several issues ranging from lack of capacity or knowledge for conducting impact evaluation in social enterprises, lack of its prioritisation by social entrepreneurs to lack of resources to employ qualified personnel or experts in impact evaluation (e.g., Barraket & Anderson, 2010; da Siqueira et al., 2021; OECD, 2021).

Although social impact measurement was identified among the critical success factors of RSEs, it was ranked lower than other factors by social enterprise managers (Musinguzi et al., 2023a) which might be an indication that it is not prioritised. The OECD (2021) identifies resource constraints as a barrier to social impact measurement in social enterprises. The diverse missions of social enterprises mean that large datasets generalised across organisations have limited suitability for social impact measurement: researchers in the related field of corporate social responsibility recommend the use of small and specialised datasets (Barnett et al., 2020). In their recent systematic literature review on social impact measurement in RSEs, Musinguzi et al. (2023b, pp. 141–142) outline the challenges of social impact measurement. These include the lack of universal definition, inconsistency in the rationale and motivation for measurement of performance and its improvement, resource constraints (both financial and human), alternative priorities for social enterprises and social entrepreneurs, and past experience.

3. STUDY CONTEXT RATIONALE AND METHODS

3.1 Rationale

Over 400 million Africans live in poverty and with food insecurity. Eight in 10 of the world's poor are expected to be living in Africa by 2030, of which two thirds will be rurally located (Sustainable Development Goals Centre for Africa (SDGCA), 2021) with the largest proportion in sub-Saharan Africa (Beegle et al. (2016) in Navarrete Moreno & Agapitova (2017a)). Davies et al. (2019) in SDGCA (2021) estimate that 80% of Africa's rural poor are smallholders. We address a rural Ugandan agricultural RSE. Exemplifying a typical African context particularly sub-Saharan Africa, Uganda is largely agrarian (UBOS, 2018), afflicted by poor access to services (Tumwesigye et al., 2021), is persistently poor (World Bank, 2021) and has weak social entrepreneurship policies and institutions (Navarrete Moreno & Agapitova, 2017a; Tamale et al., 2020). More about the governance, political and institutional characteristics of the study context are detailed in Musinguzi et al. (2023c, pp. 4–5). The largest proportion of the Tooro/Rwenzori sub-region[5] in which this study was conducted are smallholder farmers who live in rural areas just like the entire country where 76% of the population live in rural areas and are smallholder farmers who contribute 89% to the country's poverty (Niko et al., 2017; UBOS, 2018, 2022; Yakini Development Consulting, 2018). The incidence of rural poverty is more than two times higher than that of urban poverty (UBOS, 2021, p. xvii). Similarly, the multidimensional poverty headcount in rural areas and multidimensional poverty index in Uganda are three times larger than those in urban areas (UBOS, 2022, p. 8).

The RSE we study, Rural Development (not the real name for anonymity), hereafter (RD), operates mainly in Kyenjojo district although some of its interventions are implemented beyond this district. Like many social enterprises in Uganda (Navarrete Moreno & Agapitova, 2017a; Tamale et al., 2020), RD is registered as a not-for-profit and it is involved in various agricultural development interventions implemented mostly in its home district of Kyenjojo since 2008 and these include: promoting coffee production and productivity (coffee intervention); introduction

and promotion of village savings and loans associations (village savings and loans associations intervention); introduction and promotion of vegetable production (vegetable intervention) and promoting of orphaned crops seed production and usage (orphaned crop seed multiplication intervention). Three of the interventions were also implemented in neighbouring districts i.e., the coffee and the village savings and loans associations interventions in Kyegegwa and the orphaned crop seed multiplication intervention in Kamwenge. The core area of operation of RD is Nyabuharwa sub-County in Kyenjojo District where it has been implementing all interventions since 2008 (Musinguzi, Villano, & Baker, 2022b).

RD is involved in several activities linked to its interventions (see Appendices A1, A5, A6, A7 and A8 in the online supplemental data for details) that include formation and training of groups which are an alternative for financial inclusion in regional, rural and remote settings – village savings and loans associations, introduction and demonstration of agricultural development innovations that include among others good agronomic practices, gender mainstreaming in agricultural value chains e.g., in the coffee intervention. In the implementation of its interventions, RD applies approaches focused on local/regional development (Barca et al., 2012; OECD, 2012 in Pike et al., 2016) which include market access improvement for enabling smallholder profitability (e.g., Doherty & Kittipanya-Ngam, 2021) and change agent model (e.g., Access Africa, 2010; Barungi, 2017; Kamurungi, 2021; Scheer & Ariko Okelai, 2019) also known as private service provider model (e.g., Boyd & Spencer, 2022; Marc, 2018; Spencer et al., 2018) for the sustainability of interventions where the payment of the agents, for the service provided, is by the beneficiaries/community members, in this case the smallholder farmers. The various forms of the change agent model applied by RD include: the village agents (prior to whom RD employed and paid community-based trainers) for the village savings and loans associations and the local seed business and local seed business trainer for the orphaned crop seed multiplication intervention.

RD was a not-for-profit that adopted a social enterprise model like many other organisations currently (Beaton & Dowin Kennedy, 2021). RD still operates its entrepreneurial activities registered as a not-for-profit as there is no official legal form recognised for social enterprises in the country (Navarrete Moreno & Agapitova, 2017b; Odyek, 2020; Tamale et al., 2020). Indeed, most studied social enterprises in the Ugandan context appear in a non-profit form (e.g., Langevang & Namatovu, 2019; Mulindwa, 2015; Navarrete Moreno & Agapitova, 2017b; Nsereko, 2020; Nsereko et al., 2018, 2021; Sserwanga et al., 2014). RD's revenue is reported to be 44,755,650 Ugandan shillings (US$12,600) of which about 50% is generated from its business activities and the remainder is project funding from national and international partners. RD mainly operates in the agricultural/service sector. There are other actors in this sector within the area and they include: Netherlands Development Organisation (SNV); Operation Wealth Creation (OWC) formerly National Agricultural Advisory Services (NAADs); Hanns R. Neumann Stiftung; Catholic Relief Services (CRS); BRAC; FINCA; The AIDS Support Organization (TASO); Baylor Uganda; Bringing Hope to the Family (BHTF) and the United Nations Children's Fund (UNICEF). In their operations, these actors use community groups. In most cases, there is no formation of new groups but only the renaming of existing community groups to fit into a particular actor's name. In the area of study, the community groups used by most of the above actors are village savings and loans associations that were originally formed by RD. RD is registered as a company limited by guarantee. It employs five full time staff and mainly relies on local casual extension staff employed mainly on a project basis for the implementation of its interventions.

3.2 Data and analysis

3.2.1 Qualitative data

Background and organisational data about RD was obtained from various internal reports and an interview with the manager. This identified RD's interventions' theory of change (Appendix

A1) which in turn reveals relevant indicators and cause-and-effect pathways. The theory of change informed the focus group discussion, in which 11 individuals (five females and six males), comprising community leaders (particularly the local council one heads who are custodians of their respective communities or their representatives) and RD-beneficiaries, participated for some 90 minutes. Focus group discussion participants were collectively tasked with completing a 5-point Likert scale degree of agreement regarding the effectiveness[6] of RD's intervention activities and outcomes. The final rating recorded was a consensus following discussions which were recorded as meeting notes. The ratings were interpreted in two categories: agreement (>3.5 (70%)) and disagreement otherwise. Discussions centred on reasons behind 'agreement' or 'disagreement'. To triangulate the findings from the focus group discussion, participants and RD's manager also rated the same items, with explanations.

3.2.2 Quantitative data

We employed a multi-stage process to generate a sample comprising beneficiaries and non-beneficiaries without selection bias, based on a pilot study in Nyabuharwa sub-County. This indicated that five out of every 10 households were RD beneficiaries. The Cochran formula (Cochran, 1953) was used to generate the appropriate sample size, totalling 1021 households (523 RD-beneficiaries and 498 non-beneficiaries). RD-beneficiaries were randomly selected from RD's membership register, while non-beneficiaries were randomly selected from the local council's registers of the same villages. Quantitative data were collected from selected households in 2020, using a pretested household survey instrument. An android-enabled handheld electronic device was used for data entry, whence data went automatically to a secure server. Selection of the variables (social impact indicators) was based on the theory of change of RD as is commonly applied in the social impact measurement of social enterprises given the contextual nature of social enterprise activities. This has also been used in other quantitative studies in the field (e.g., Dubé et al., 2020; Kabeer & Sulaiman, 2015). Social capital was considered among the social impact indicator variables given that it is a major building block for informal mechanisms in informal finance (Oraro & Wyss, 2018). Existing evidence indicates that participating in financial groups improves groups members' social ties (Feigenberg et al., 2013). With particular reference to village savings and loans associations, a symbiotic interlinkage between social capital and village savings and loans associations has been explored in various studies (e.g., Burlando & Canidio, 2017; Craig et al., 2023; Musinguzi, 2016). Some of these studies find that village savings and loans associations can be a catalyst for enhanced social capital (e.g., Allen & Panetta, 2010 in Musinguzi (2016)) whereas social capital can also act as a foundation for village savings and loans associations formation as well as their functioning. Similarly, village savings and loans associations enhance social capital through the promotion of cooperation and trust.

All the data collection tools were approved by relevant human research ethics authorities in both Australia and Uganda (permit numbers: HE 19-222, MAKSS REC 12.19.363 and SS434ES). The tools including consent forms were all translated into the local language. Written informed consent to participate was provided by the research participants who also consented for this information to be included in the published article. The first draft of this manuscript as well as the final revised version were shared with the research participants. Identifying information, particularly the name of the RSE and its beneficiaries have been anonymised to ensure participant safety and privacy.

3.3 Quantitative empirical strategy

3.3.1 Model and key variables

We assume a binary participation choice, based on a smallholder's judgement that they would receive benefits higher than for non-participation. We use a logit model $L(D_i = 1)$, defined as

follows:

$$L(D_i = 1) = a_0 + \sum_{i=1}^{18} \alpha_i X_i + e_i \quad (1)$$

where X_i are variables that explain participation of smallholders in RD's interventions (Ayuya et al., 2015; Khoza et al., 2019). Table 1 presents a description of these variables below which social impact variables are also outlined.

3.3.2 Social enterprise impact

We use propensity score matching (Kabeer & Sulaiman, 2015; Li, 2013) to identify matches between RD-beneficiaries and non-beneficiaries to evaluate the impacts of participation on outcome variables: a 'treatment effect' (Li, 2013).

3.3.2.1 Propensity score estimation and social impacts as treatment effects. The estimated propensity scores portray the likelihood of a household being an RD-beneficiary while taking into consideration both RD-beneficiaries and non-beneficiaries, with reference to a set of observable variables (Becker & Ichino, 2002; Li, 2013). The scores are estimated using an appropriate algorithm for matching RD-beneficiaries with non-beneficiaries. Any RD-beneficiaries possessing a propensity score lying between specified minima and maxima are eliminated from the sample (Becker & Ichino, 2002; Li, 2013). We further employ the balancing property test (Becker & Ichino, 2002; Li, 2013), to ensure that households from distributions of selected observable covariates had equal likelihood of selection. The choice of variables for estimation of the propensity score for matching must not be influenced by participation in RD's interventions, but may influence the social impact indicator variables selected. Thus, the number of variables or covariates we used to compute the propensity score differ (is lower than) from that used in identifying the determinants of RD participation (in the probit model) in Section 3.3.1 above (Appendix A2). This is because the unselected covariates would worsen the quality of our matching.

Matching algorithms include nearest neighbour, radius, stratification and kernel matching, each of which has strengths. We employ nearest neighbour matching as it performs best in cross-sectional datasets (Kabeer & Sulaiman, 2015). We conduct a sensitivity analysis using the remaining matching techniques to test the robustness of our results with regard to matching algorithms (Appendix A4). In addition to the 'balancing property' satisfaction, we further perform a means comparison test for the unmatched and matched samples and apply the pseudo R^2 for testing propensity score differences between RD-beneficiaries and non-beneficiaries (Rola-Rubzen et al., 2020). We present the associated indicators of the quality of the matching results in Tables 2 and 3. Lastly, we examine the social impacts of participation in RD's interventions on selected variables drawn from its theory of change (Table 5).

The matched samples are then used for the estimation of the social impacts of participating in RD's interventions, expressed as the average treatment effect on the treated (ATT) (Li, 2013). ATT is an estimate of the average impact of participating in RD's interventions and it is represented as:

$$ATT = E(B_{i1}|D = 1, Z) - E(B_{i0}|D = 1, Z) \quad (2)$$

where B_1 and B_0 are the social impact indicator variable's average values for RD-beneficiaries and non-beneficiaries, respectively, and E is a dummy variable 1 for RD-beneficiaries and 0 otherwise.

Table 1. Variables determining smallholder household participation in RD's interventions.

Variable	Description
Determinants of participation	
	Demographic factors
X_1 (AGE)	Age of household head (years)
X_2 (GENDER	Gender of household head (1 = male)
X_3 (EDUCHEAD)	Level of education attained by the household head (1 = high (completed secondary education and above = 3) and low = 0 (no formal education = 0, primary education = 1, some secondary education = 2)
X_4 (EDUCPOUSE)	Level of education attained by the household head's spouse (1 = high (completed secondary education and above = 3), and low = 0 (no formal education = 0, primary education = 1, some secondary education = 2)
X_5 (HHSIZE)	Household size (number of household members)
X_6 (DEPENDENCY)	Dependency ratio (sum of the number of children aged between (0–14) and persons above the age of 65 divided by the economically active persons aged between 15–64 years)
X_7 (MARISTATUS)	Marital status of the household head (1 = if married/divorced/separated)
X_8 (OCCUHEAD)	Main occupation of the household head (1 = if skilled (craft and related trade plant and machine operator/assembler = 1 and professional/managerial/technical/assistant professional = 3) and unskilled = 0 (elementary occupations i.e. agricultural labourers/casual labourers = 2, service and sales (village shops, village hotels/cafes, village saloons (hair dressing and barbers) = 4, skilled agriculture/forestry/fishery (in this case non-skilled smallholders) = 5)
X_9 (WAGEHH)	Wage employment (1 = if a household has salaried/waged income)
X_{10} (LABOURHH)	Household labour force (economically active persons in a household aged between 15–64 years)
	Economic factors/farm characteristics
X_{11} (TOTALLAND)	Total land holding (total size of land owned by a household)
X_{12} (PAIDLABOUR)	Labour use on the farm (number of workers (log) on the farm)
X_{13} (FARMEXP)	Farming experience (number of years spent in farming as an income generating activity)
X_{14} (OFF FARM)	Involvement in off-farm activities (1 = if a household is involved in any off-farm activities)
	Institutional factors
X_{15} (PARTOTHER)	Participation in other organisations (1 = if a household participates in other organisations)
X_{16} (EXTENSION)	Receipt of any extension visit (1 = if a household has received extension visit from any service organisation)
X_{17} (CREDIT)	Credit access (1 = if a household has received a loan)
X_{18} (DISTMARKET)	Distance from the nearby produce market (number of kms from a household to the nearby produce market
Social impact variables	
	Household production improvement
IMPROVESEED	Improved seed/seedling use (yes = if a household uses improved seed/seedling across all the three RD supported crops)
FERTILISER	Fertiliser use (amount of fertiliser (log) used on the farm)
CROPDIVERSITY	Crop diversity (total number of crops grown by a household)
IGAs	Number of income generating activities (total number of farm and off-farm activities households were engaged in)
YIELD	Total yield (total harvest from households (log))

(*Continued*)

Table 1. Continued.

Variable	Description
FOOD	Food storage (amount of food stored by a household (log))
	Social capital improvement
GROUPNBR	Group membership (number of groups a household head or family member is involved with)
VSLA	Membership in a village savings and loans association (VSLA) (yes = if a household head is a member of a VSLA)
ATTENDANCE	Group meetings attendance (number of group meetings a household head or household member has attended)
GRPDECISION	Decision making in a group (active = when a household head or any member contributes actively to decision making in groups)
	Economic improvement
INCOME	Total household income (total of annual household income estimated from crops and livestock that were sold by the household (log))
SAVINGS	Household savings (proportion of income saved by a household (log))
ASSETS	Household asset value (cash value of household's assets in their present condition (log))
	Broader welfare improvement
LEISURE	Women's satisfaction with leisure time (yes = satisfied if a woman indicates that she has enough time for her leisure activities)
HHDECISION	Household decision making (this ranges between 0–4 developed on the basis of whether a household jointly makes decisions on four key aspects: where to save the household's money; where to get larger credit(s) and how to use them; purchase, sale, or transfer of household's large assets; and participation in production and sale of cash crops. Each of these components contributes a score of 1 if the household is jointly involved or otherwise 0. The higher the scores, the more the households are involved in joint decision making).
FOODSEC	Food security (this is measured through household hunger score hunger score which ranges between 0–6 under three categories: 0–1: little to no hunger in the household 2–3: moderate hunger in the household 4–6: severe hunger in the household).
POVERTY	Household multidimensional poverty index scores (household multidimensional poverty measure in the three dimensions of deprivation (education, health and living standards (see Alkire & Foster, 2011 for the procedure followed).

Table 2. Indicators of matching quality.

Item	Unmatched	Matched
Number of observations	1021	1000
Treated	523	523
Control	498	477
Absolute bias		
Mean	12.9	3.0
Chi-square	101.91	3.41
$P >$ Chi-square	0.000	0.970
Pseudo-R^2	0.072	0.002

3.3.2.2 Matched sample selection. Propensity score matching generated matched groups of RD-beneficiaries and non-beneficiaries satisfying the balancing property (Table 2; Appendix A2) with five blocks in a zone of −0.262 and 0.0280 consisting of a total of 1000 smallholders (523 RD-beneficiaries and 477 non-beneficiaries) after rejection of 21. Results indicate that the absolute bias before matching was 12.9 and was significant. After matching, it reduced to 3.0 and was

Table 3. Balancing tests for variables applied in the probit model specification.

		Mean				*t*-test	
Variable	**Data**	**Treated**	**Control**	**% Bias**	**% Bias reduction**	***t***	***p > t***
GENDER	Unmatched	0.641	0.767	−28.0		−4.46	0.000
	Matched	0.650	0.653	−0.5	98.1	−0.08	0.937
AGE	Unmatched	40.25	40.267	−0.1		−0.02	0.984
	Matched	40.254	40.825	−4.3	−3344.7	−0.68	0.495
EDUCHEAD	Unmatched	1.174	1.008	20.5		3.28	0.001
	Matched	1.166	1.143	2.9	85.9	0.46	0.645
FARMEXP	Unmatched	13.713	9.908	34.7		5.53	0.000
	Matched	13.111	13.24	−1.2	96.6	−0.18	0.855
OCCUHEAD	Unmatched	3.237	3.534	−21.1		−3.37	0.001
	Matched	3.234	3.264	−2.1	90.1	−0.34	0.737
DISTMARKET	Unmatched	5.562	6.152	−12.5		−2.00	0.046
	Matched	5.604	5.425	3.8	69.7	0.62	0.536
HHSIZE	Unmatched	4.943	4.833	4.1		0.65	0.513
	Matched	4.953	5.030	−2.9	29.6	−0.45	0.651
DEPENDENCY	Unmatched	1.016	1.009	−1.6		0.09	0.930
	Matched	1.010	1.029	−1.6	−194.2	−0.25	0.804
LABOURHH	Unmatched	2.052	1.934	7.0		1.12	0.264
	Matched	2.065	2.217	−9.0	−29.2	−1.35	0.177
TOTALLAND	Unmatched	1.993	1.989	0.2		0.04	0.972
	Matched	1.996	2.021	−1.5	−563.3	−0.24	0.810

no longer significant. The pseudo-R^2 was also checked and was found to be 0.072 after matching. This small pseudo-R^2 indicates that the covariates used in the matching were randomly distributed between the RD-beneficiaries and non-beneficiaries (Rola-Rubzen et al., 2020).

3.3.2.3 Matching quality

We also conducted balancing tests for the observable variables specified in the probit model (Table 3; Appendix A2). Results in Table 3 indicate that bias was reduced for each of the observed variables for RD-beneficiaries and non-beneficiaries, and differences in means are non-significant after matching. We also provide a graphical representation of the matching in Appendix A3. We conclude that the matched samples are very good proxies for a missing counterfactual, and so enable the estimation of the social impacts of participation in RD's interventions. We used a variety of matching techniques in the estimation of social impact based on the selected indicators and results confirm model robustness and are not sensitive to matching technique (Appendix A4).

4. RESULTS

4.1 Factors that determine participation in RD's interventions

As shown in Table 4, all household demographic characteristics significantly influence the probability of a household's participation, with the exception of the household head's education level, and the household's dependency ratio. Older household heads are somewhat unlikely to participate in RD's interventions, and female headed households are more likely to participate than male headed ones. Women with more education are more unlikely to participate in RD's interventions than those with less. This could be because, more educated and knowledgeable females may not need RD's interventions, or because of involvement in non-agricultural activities. As might be expected, household heads in more skilled occupations are less likely to participate in RD's interventions, as they may lack time for involvement. Married household heads (living with a spouse or

Table 4. Results of the logistic model showing factors that determine a smallholder household's participation in RD's interventions.

Variable	Odds ratio	Std. Error	*z*-value	*p*-value
Demographic factors				
AGE	0.965	0.009	−3.74	0.000***
GENDER	0.578	0.131	−2.41	0.016**
EDUCHEAD	1.903	0.826	1.48	0.138
EDUCPOUSE	0.445	0.214	−1.68	0.093*
HHSIZE	0.822	0.048	−3.36	0.001***
DEPENDENCY	1.049	0.103	0.49	0.623
MARISTATUS	1.434	0.275	1.88	0.060*
OCCUHEAD	0.540	0.162	−2.05	0.040**
LABOURHH	2.053	0.490	3.02	0.003**
Economic factors/farm characteristics				
TOTALLAND	0.802	0.053	−3.37	0.001***
PAIDLABOUR	0.912	0.029	−2.91	0.004***
FARMEXP	1.044	0.012	3.72	0.000***
OFFFARM	0.809	0.167	−1.03	0.305
Institutional factors				
PARTOTHER	3.551	0.764	5.89	0.000***
EXTENSION	11.206	2.578	10.51	0.000***
CREDIT	29.617	6.757	14.85	0.000***
DISTMARKET	1.010	0.022	0.43	0.669
Constant	1.151492	.813591	0.20	0.842
Number of observations	**1021**			
Pseudo R^2	**0.507**			

Notes: *Significant at 10%, **5% level and ***1% level.

divorced) are more likely to participate in RD's interventions. Household size is negatively associated with participating in RD's interventions and the reason for this is unclear, but diversity of economic activity may play a role. However, we also find that households with a larger number of economically active individuals are more likely to participate in RD's interventions.

All the economic factors and farm characteristics considered, apart from involvement in off-farm activities, influence a household's probability of participating in RD's interventions. Households with heads with more farming experience are likely to participate in RD's interventions, possibly because they are already committed to agriculture. Households with more land, and those with the capacity to hire workers, are less likely to participate in RD's interventions. Thus, poor households are more likely to participate which confirms the wellbeing improvement mission of the RSE.

All institutional factors, aside from distance to market, significantly influence the household's tendency of participating in RD's interventions. Households that take part in other initiatives (e.g., non-government organisations or government programmes) have a high probability of participating in RD's interventions. This may be due to awareness of development interventions' opportunities, and similar reasoning supports the significance of access to extension services and credit.

4.2 RD's social impacts

4.2.1 Average treatment effects

Below we describe the measured indicators' average treatment effects using nearest neighbour matching technique. The effects are categorised as household production, social capital, economic and broader welfare improvement indicators.

Table 5. RD's social impact on households' wellbeing estimates in terms of average treatment effect on the treated based on nearest neighbour matching technique.

Dependent variable	Nearest neighbour[a]
Household production improvement	
FERTILISER	0.732 (4.66***)
CROPDIVERSITY	0.140 (3.226***)
IGAs	1.422 (8.355***)
YIELD	1.262 (10.480***)
FOOD	3.670 (52.332***)
Social capital improvement	
GROUPNBR	0.554 (5.257***)
ATTENDANCE	12.796 (6.861***)
Economic improvement	
INCOME	1.500 (11.981***)
SAVINGS	5.172 (10.083***)
ASSETS	1.240 (9.319***)
Broader welfare improvement	
POVERTY	−0.095 (−6.304***)
Balancing property satisfied	Yes
Common support imposed	Yes
Observations	786
Treated	523
Controls	263

Notes: [a]Bootstrapped *t*-statistics, 80 replications. *t*-statistics in parentheses. *Significant at 10%, **5% level and ***1% level.

4.2.1.1 Household production. All indicators measured under this category show significant positive and robust average treatment effects, so it is clear that RD beneficiaries experienced impact. RD-beneficiaries significantly improved their use of improved seeds (d*f* = 1, 161.46, *p* = 0.000). Some 39.8% used improved seeds/seedlings, as compared to 5.7% of the non-beneficiaries (Table 6). RD-beneficiaries also increased their fertiliser use (Table 5) by 73.2 percentage points more than did non-beneficiaries. Such impacts can be attributed (via theory of change) to good agronomic practices training and demonstrations delivered by RD. The RD-beneficiaries also increased their crop diversity by 14 percentage points over non-beneficiaries due to their growing most of the intervention crops that RD was promoting. RD-beneficiaries' income generating activities increased by 142.2 percentage points more than did non-beneficiaries'. This is attributed to the beneficiaries' engagement in growing the various crops and also starting different income generating activities as trained by RD in selection, planning and management of income generating activities and to practice farming as a family business. Total crops' yield from RD-beneficiaries also increased by 126.2 percentage points more than non-beneficiaries', and this is also reflected in the significant increase in the amount of food stored: an increase of 367 percentage points for RD-beneficiaries. These results could be attributed to good agronomic practices in farming, and food security training by RD, respectively.

4.2.1.2 Social capital improvement. RD-beneficiaries increased their participation in farmers' and other stakeholders' groups, by 55.4 percentage points (Table 5). Furthermore, RD-beneficiaries more actively contributed to decision making in these groups (d*f* = 1, 119.84, *p* = 0.000). Some 69.6% were actively involved in decision making in their groups, as compared to 35% of the non-beneficiaries. RD-beneficiaries also participate in village savings and loans associations significantly more than do non-beneficiaries (d*f* = 1, 897.08, *p* = 0.000): all the

Table 6. RD's social impact on households' wellbeing estimates from Pearson chi-square method for categorical variables.

	Category			
Variable	**Non-beneficiaries**	**Beneficiaries**	**Total**	**Pearson/chi-square**
Household production improvement				
IMPROVESEED				
No	450	315	765	161.46, $p = 0.000$
Yes	27	208	235	
Social capital improvement				
VSLA				
No	450	0	450	897.08, $p = 0.000$
Yes	27	523	550	
GRPDECISION				
Active	167	364	531	119.84, $p = 0.000$
Not active	310	169	469	
Broader wellbeing improvement				
LEISURE				
Not satisfied	339	138	383	414.44, $p = 0.000$
Satisfied	44	479	617	
FOODSEC				
0–1	335	489	824	108.22, $p = 0.000$
2–3	47	27	74	
4–6	95	7	102	
HHDECISION				
0	258	163	421	56.26, $p = 0.000$
1	57	75	132	
2	14	20	34	
3	26	51	77	
4	122	214	336	

RD-beneficiaries (100%) are village savings and loans associations' members while only 27 (5.7%) non-beneficiaries are. Being a member of a village savings and loans association has implications for household savings and credit access as they are the major ways poor rural households save money and access credit (Table 6).

4.2.1.3 Economic improvement. Total household income (Table 5) of RD-beneficiaries increased by 150 percentage points more than did that of non-beneficiaries. Similarly, their household savings increased by 517.2 more than the non-beneficiaries'. This improvement in income and savings could be linked to the increased number of income generating activities RD-beneficiaries are involved in, and membership in village savings and loans associations. Village savings and loans associations which were introduced by RD may have enabled rural households to learn to save, access credit and invest in various household income generating activities. This is also reflected in the household asset value for RD-beneficiaries which increased by 124 percentage points more than the non-beneficiaries'.

4.2.1.4 Broader wellbeing improvement. We represent RD's poverty-related social impacts broadly through a multidimensional poverty index, which includes several dimensions of a household's wellbeing. RD-beneficiaries households' multidimensional poverty index reduced significantly by 9.5 percentage points as compared to non-beneficiaries' (Table 5).

RD also targeted improving women's wellbeing and we measured this through considering aspects of their leisure time and decision making in the household. RD implemented gender-specific training on joint planning and budgeting, designed to contribute to these ends. RD-beneficiaries' spouses had significantly more leisure time as compared to the non-beneficiaries' (df = 1, 414.44, p = 0.000) (Table 6). On this subject, 95% of RD-beneficiaries report satisfaction with their leisure time as compared to 9.2% of the non-beneficiaries. This result may be an outcome of RD's gender training where men and women were trained together and encouraged to participate in all household activities jointly, to enable women to have some time to rest, visit friends, etc. We find that RD-beneficiaries were significantly more involved in joint decision making in their households than were non-beneficiaries (df = 4, 56.26, p = 0.000).

Food security is an important indicator of household wellbeing which we estimated in terms of the household hunger score. We find a significant difference between the two groups (df = 2,108.22, p = 0.000). Most RD-beneficiaries' households (93.5%) fall into the 0–1 and 1.3% in the 4–6 categories on the household hunger scale (implying a majority face little to no hunger), compared to 70.2% in 0–1 and 19.9% in the 4–6 categories of the non-beneficiaries (implying that many face severe hunger).

4.2.2 Ratings from qualitative assessment

Qualitative results from the focus group discussion's ratings according to the theory of change/logic model of RD's interventions (Table 7 and Appendices A6, A7 and A8) confirm focus group discussion participants' and RD's manager's high effectiveness rating for the interventions' activities and outcomes (Table 7).We present the ratings per intervention with issues identified as vital by the focus group discussion participants and RD's manager, and these relate mainly to effectiveness and long term impacts.

4.2.2.1 Coffee intervention. Focus group discussion participants and RD's manager provided overall ratings of 3.7 (73.3%) indicating that the coffee intervention activities were effective. However, two individual activities related to change agents were identified as ineffective: the extension link farmers and their training activities. Notably this result is the same for both the focus group discussion participants and RD's manager. The participants reported that they were not properly involved in these activities including the selection process for extension link farmers and their training: the extension link farmers were reported to not be active at the time of the focus group discussion.

The focus group discussion participants and RD's manager disagreed with ratings 2.7 (53.3%) and 2 (40%) respectively of the effectiveness of the outcomes of the coffee intervention.

Table 7. Qualitative social impact evaluation of RD's interventions through ratings of activities and outcomes by focus group discussion participants and RD's manager.

	Average ratings[a] of activities		Average ratings of outcomes	
Interventions	**Focus group discussion**	**Manager**	**Focus group discussion**	**Manager**
Coffee	3.7 (73.3%)	3.7 (73.3%)	2.7 (53.3%)	2 (40%)
Village savings and loans associations	3.6 (72.9%)	3.6 (71.4%)	3.7 (73.3%)	3.8 (76.7%)
Vegetable	4.4 (87.7%)	3.9 (78.5%)	4 (80%)	3.9 (77.5%)
Orphaned crop seed multiplication	4.8 (96.4%)	3.8 (76.4%)	5 (100%)	4 (70%)

Notes: [a]All ratings in this table represent the level of disagreement/agreement regarding the effectiveness of an intervention's activities and outcomes.

However, an important outcome regarding the sustainability of the intervention and its capacity to impact the smallholders – 'promote improved coffee production technologies in order to increase coffee production and productivity in Nyabuharwa sub-County' was rated highly. This supports the positive reported production impacts observed in the quantitative survey. The ineffectiveness of the intervention arose mainly from two outcomes of the intervention; related to processing (rated 2 (40%) and 1 (20%)) by the participants and RD's manager respectively, and marketing of coffee (rated 1 (20%)) by both the participants and RD's manager (Appendix A5). The focus group participants note that RD is no longer actively involved in promoting these and thus product bulking and marketing has dwindled over time. However, the quantitative analysis maintains that RD-beneficiaries generate some coffee income from local markets, at a higher rate than do non-beneficiaries. This situation is evidence of 'drop-off' and is cause for RD to address the maintenance of social impact.

4.2.2.2 Village savings and loans associations intervention. Both the focus group discussion participants and RD's manager generally reported the effectiveness of the village savings and loans associations' activities with average ratings of 3.6 (72.9%) and 3.6 (71.4%) respectively. Two key activities (village savings and loans associations share out services by community based trainers and village agents; and village savings and loans associations' toolkit acquisition) were rated at 5 (100%) by both the participants and RD's manager. The manager noted that the effectiveness of these have ensured that RD continuously offers this service to village savings and loans associations. Conversely, some activities that relate to the long-term sustainability of the village savings and loans association intervention received low ratings: payments of allowances to village agents by village savings and loans associations (rated 1 (20%) by both focus group participants and RD's manager) showing no support for village savings and loans groups' paying for the training services of the village agents. As above, participants' lack of involvement in the village agent selection process was noted. Further, and as confirmed by one village agent who happened to be in the focus group discussion, the village agents are not actively supported by RD. Generally the participants and RD's manager both noted some ineffectiveness regarding the general conduct of monitoring and evaluation of this intervention (Appendix A6). One outcome related to the village savings and loans associations' ability to offer access to financial services received consistently low ratings (2 (40%) by both participants and RD's manager). The reason was that although village savings and loans association groups provided beneficiaries an opportunity to save and borrow, the size of loans was insufficient to achieve commercialisation as the project outcome intended. The focus group discussion also noted that many village savings and loans association members join a number of groups to get access to loans.

4.2.2.3 Vegetable intervention. Average ratings of the vegetable intervention's activities by the participants and RD's manager (4.4 (87.7%) and 3.9 (78.5%), respectively) indicate their effectiveness. However, two important activities related to youth skilling in vegetable marketing were rated low at 2 (40%) and 1 (20%) by both participants and RD's managers (Appendix A7). There was agreement regarding the effectiveness of the outcomes, with ratings of 4.4 (87.7%) and 3.9 (78.5%) by the participants and RD's manager respectively (Table 7). However, one of the outcomes that relates to increased income through market access was regarded as ineffective (1 (20%) and 2 (40%) by the participants and RD's manager respectively) (Appendix A7). The reason given for this was that there is insufficient local vegetable processing capacity. The focus group discussion noted that RD was not involved in purchasing their vegetables, to which RD's manager responded that RD had no funding for such an activity.

4.2.2.4 Orphaned crop seed multiplication intervention. There was agreement (Table 7; Appendix A8), about the effectiveness of the activities by participants and RD's manager rated

at 4.8 (96.4%) and 3.8 (76.4%), respectively. Participants noted that with this intervention, RD engages fully with the relevant selected local seed business trainers and local seed businesses, and follows up to ensure their success. Both the participants and RD's manager also generally agreed regarding the effectiveness of this intervention's outcomes with ratings of 5 (100%) and 4 (80%) respectively. RD's manager noted that the approach used, i.e., involving the local seed businesses trainer, local seed businesses and farmer groups, supports sustainability of the intervention and prevents 'drop-off'.

5. DISCUSSION, STUDY CONTRIBUTION AND CONCLUSION

5.1 Discussion

We respond to calls for studies of development interventions in rural areas due to acknowledged disparities in poverty in regions (e.g., Breau & Saillant, 2016; Harrison et al., 2019; World Bank, 2021) and recognition of the diverse impacts of market forces within and between regions (Pike et al., 2016). We identify social enterprises, particularly RSEs, as one such force which is a response to 'social and spatial inequality' (which Martin, 2021 notes requires to be focused upon) that is committed to the advancement of equitable regional and local outcomes.

As local and regional development actors (e.g., Pike et al., 2016, p. 54), applying place-based approaches (Barca et al., 2012; Horlings, 2015), our results suggest that RSEs have the potential to 'generate welfare gains and diffuse prosperity amongst localities and regions with different and/or weaker sets of assets and resources' as seen in developing countries and more so in their rural, remote and regional areas. Our study shows that RSEs contribute to mostly positive social impacts on their beneficiaries. These results concur with emerging studies in social entrepreneurship that focus on smallholders (Doherty & Kittipanya-Ngam, 2021). In this study, the RSE was able to train, demonstrate and introduce innovative interventions including good agronomic practices, gender and agricultural value chain improvement trainings and demonstrations, and alternatives for financial inclusion in a rural/regional setting.

In implementing its interventions to achieve social impact, the RSE was engaged at the local level with smallholders using local and regional development-focused approaches (Barca et al., 2012; OECD, 2012 in Pike et al., 2016). These include the market access improvement approach to enable smallholders' profitability, and so promote long term sustainability of the intervention. Doherty and Kittipanya-Ngam (2021) have noted that market access is vital in social enterprises' efforts to create social impacts. The RSE in our study was not successful in this regard, and the RSE's management noted a lack of financial resources as a major cause.

The change agent model, another local and regional development-focused approach which appears in various forms involves identifying, training and incorporating local people who continue to provide services at reasonable costs within their local/regional communities. There is interest in its application by governments (e.g., Kamurungi, 2021; Scheer & Ariko Okelai, 2019) and regional/rural development agencies (e.g., Access Africa, 2010; Barungi, 2017) in developing countries. However, emerging findings (e.g., Scheer & Ariko Okelai, 2019) in Uganda note that it might not be applicable to all extension service provision. In our case, it was applied by the RSE's interventions in different forms: as extension link farmers in the coffee intervention; local seed business and local seed business trainer in the orphaned crop seed multiplication intervention; village agents in the village savings and loans associations intervention and the village savings and loans associations intervention itself. These approaches were designed to enable sustainability of the interventions.

The village agent model was developed as an alternative low-cost model for ensuring the replication and sustainability of village savings and loans associations (Access Africa, 2010). Emerging recommendations from implementing organisations (e.g., Self & Turk, 2019) and academics (e.g., Ksoll et al., 2016) are inconclusive about its long term effectiveness. We find

that in the area of our study, it is partially effective with regard to continuous supply of village savings and loans associations toolkits to village savings and loans associations as well as offering share out services to them. These services have been successful because the village savings and loans associations are able to pay for them. However, the village savings and loans associations are not capable/not willing to pay for the training services of the village agents. Thus, the model is not effectively working, and concerns remain about social impact 'drop-off'.

Similarly, the village savings and loans associations model is of current interest to development practitioners due to its potential role in local, remote and regional development as key to financial inclusion (e.g., Eckhoff et al., 2019; Ksoll et al., 2016; van Rooyen et al., 2012), improving food security (e.g., van Rooyen et al., 2012), and enhancing women's empowerment (e.g., Eckhoff et al., 2019; van Rooyen et al., 2012). Our study finds that although smallholders access loans from their village savings and loans associations, the loans are of insufficient size, concurring with Burlando et al.'s (2021) Ugandan study. This constraint prevents broader financial impact, targeting commercialisation in our case study.

We identify factors affecting smallholders' participation in RSEs. We find that women were more likely to participate than men: an encouraging result with regard to the advancement of women; but indicative that alternative approaches are needed to encourage male participation, as males largely head households in Africa (UN, 2017), and Uganda in particular (UBOS, 2018). Despite recognised lack of access to services in Uganda's rural areas (e.g., Tumwesigye et al., 2021), we identify extension services and access to credit as vital for participation in the RSE's interventions.

5.2 Study contribution and conclusion

5.2.1 Regional studies, regional science literature

This study contributes to regional studies and regional science related literature by analysing place-based approaches for local and regional development (Access Africa, 2010; Barca et al., 2012; Barungi, 2017; Boyd & Spencer, 2022; Horlings, 2015; Kamurungi, 2021; Marc, 2018; Pike et al., 2016; Scheer & Ariko Okelai, 2019; Spencer et al., 2018). This is achieved through an analysis of a RSE's social impacts in a developing country context that is less studied. We employ a mixed method approach to analysis of the RSE that contributes to rigorous methods in rural studies and regional science related studies (Harrison et al., 2019) which in turn contribute to rigorous analysis for understanding and thus a basis for the reduction of spatial disparities (Martin, 2021) to achieve local and regional development and particularly within the developing world context in our case.

5.2.2 Social entrepreneurship literature

To general social entrepreneurship studies, we contribute to answering Bacq et al.'s (2021) and Chalmers (2021) calls for studies that examine outcomes of social entrepreneurial solutions and the contexts in which they work, or not. We also answer calls for a geographical focus mainly on the rural context in the emerging rural social entrepreneurship research (Muñoz, 2010; Steiner et al., 2019). This is done by identifying an RSE's outcomes in terms of its social impacts on beneficiaries, and how these could be sustained in the longer run within the rural context of a developing country. Using mixed methods, we offer rigour in both quantitative and qualitative analysis and contribute to countering the criticism of social enterprises' impacts being the subject of 'positive narratives'.

5.2.3 Practice

We contribute to local and regional development practice particularly through our RSE results which inform practitioners and supporters of the factors which enable inclusive and equitable participation in RSEs – enabling diverse smallholder farmer groups to benefit from the

RSEs' interventions (Musinguzi et al., 2022b). To social enterprise supporters such as impact investors, governments, philanthropies and multilateral organisations, our results underscore the importance of contextualising place-based approaches particularly, local and regional development approaches such as the change agent model and its variants. Operational implications include support for appropriate time periods to enable learning, adapting and scaling of interventions to reach marginalised people. Our results offer guidance on policy, particularly for local and regional development interventions to achieve uptake, effectiveness and sustainability.

5.2.4 Future studies

Current interest in the change agent model approach and its potential for service provision in rural, remote and regional areas suggests that further studies should evaluate its success. Ksoll et al. (2016) note that although the village agent approach in the village savings and loans associations interventions might achieve cost effectiveness of the intervention, research is needed to identify the effects of reliance on it.

Future research should further explore the factors influencing participation in social enterprises – RSE as exemplified in our study which is the first study of these factors in a social entrepreneurship and rural, remote and regional context of a developing country. Concerns include the household gender disparity in RSE participation. Although we applied rigorous analytical techniques to isolate the impact of the RSE, this was conducted from the point of view of RD's stakeholders. Future impact evaluation studies in this area could be conducted from the perspectives of other development actors identified.

5.3 Conclusion

Our study identifies mostly positive social impacts of social enterprises using a case of an RSE for improving the wellbeing of marginalised smallholders through agricultural and financial inclusion interventions. We also offer further evaluation of these interventions by triangulation with focus group discussions of stakeholders. We specifically address sustainability in this evaluation, due to concerns of potential 'drop off' in benefits following local and regional development interventions' completion. Our results also identify important predictors of smallholders' participation in an RSE's intervention that require consideration if RSEs are to achieve equitable, inclusive and effective participation of a diverse group of smallholders in their interventions. Our findings highlight the importance of a mixed method approach in conducting social impact evaluation, and we offer a pioneering study in providing quantitative social impact assessment of RSE in a developing country. Our mixed method approach both embodies and advocates the importance of context in the extent and nature of social impacts.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author(s).

NOTES

[1] Social entrepreneurship lacks a universal definition (Chalmers, 2021). Similarly, there is no agreed upon definition of social enterprises/RSEs. Based on emerging rural social entrepreneurship literature (e.g., Olmedo et al., 2021; Steiner &and Teasdale, 2019; van Twuijver et al., 2020), we define RSEs as organisations/enterprises that use market-based approaches to achieve their social mission – improving the wellbeing of marginalised rural communities. These RSEs are focused on regional/rural development with varying embeddedness within rural areas (Korsgaard &and Tanvig, 2015).

[2] For details regarding how most social impact evaluation studies offer a potential bias towards 'success story' narratives and mostly lack rigour, see a systematic literature review by Musinguzi et al. (2023b).

[3] Propensity score matching is a statistical matching approach that is emerging in social enterprise impact studies that use observational data in social impact assessment (e.g., Kabeer & Sulaiman, 2015; Mohanan, Babiarz, Goldhaber-Fiebert, Miller, & Vera-Hernández, 2016). This approach is applied for the estimation of treatment effect through accounting for observable variables which determine receiving the treatment (Austin, 2011; Li, 2013; Rosenbaum & Rubin, 1983).

[4] Difference in difference is an evaluation method that is applied in non-experimental settings. It involves an application of a double difference in the comparison of changes in the variable of interest between the treatment and group with a goal of estimating a programme's causal effects when treatment assignment is non-random (CAF, 2020; Fredriksson & de Oliveira, 2019).

[5] The Tooro/Rwenzori sub-region comprises of eight mainly rural districts i.e., Kabarole, Bunyangabu, Kyenjojo, Kyegegwa, Kamwenge, Kasese, Bundibugyo and Ntoroko (Musinguzi et al., 2023c).

[6] We define the effectiveness of RD based on Kroeger and Weber's (2014) definition of effectiveness of a social entrepreneurial intervention as the degree to which RD was configured to reduce its beneficiaries' (social) needs as specified in its theory of change.

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