



# Rural women microentrepreneurs, consumer acquisition, and value delivery: Evidence from a quasi-experiment in rural India

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## Abstract

Gender equality and social impact are gaining significant research attention in marketing. This paper investigates the impact of recruiting rural women microentrepreneurs on acquiring consumers and delivering value to them. We study the outcomes from a quasi-experiment in which a social enterprise recruited a group of women to become microentrepreneurs in 91 out of 164 locations (panchayats) across rural districts in India. We show that the rural locations with more women than men microentrepreneurs experienced a 40.8% increase in consumer acquisition and delivered 64.1% greater value to their consumers. Moreover, these locations with more women than men microentrepreneurs delivered \$5,445 more value for *women* consumers. Men microentrepreneurs who work in inclusive settings with other women microentrepreneurs delivered \$25,100 more value to their consumers than men microentrepreneurs working in predominantly male-work environments. This research contributes to the intersection of marketing, social entrepreneurship, and gender dynamics, underscoring the importance of empowering women for better marketing and societal outcomes.

**Keywords** Consumer acquisition · Consumer value delivery · Marketing performance · Social entrepreneurship · Women microentrepreneurs · Emerging markets · Quasi-experiment

## Introduction

Economic disparities, social inequality, and inadequate development of human capital are often amplified in rural areas across the world (Asher & Novosad, 2020; Viswanathan et al., 2021). While the rural consumers constitute a smaller percentage of the market in developed markets such as the US (Lichter & Johnson, 2023), they represent a significantly larger proportion in emerging markets like India, which encompasses a rural population of 800 million

(Narayan & Kankanhalli, 2021). In India, rural communities are largely characterized as underprivileged and backward or socially and economically disadvantaged<sup>1</sup>, evidenced by economic disparities such as exhibiting a per capita income significantly lower than that of their urban counterparts (Sharma et al., 2023; Viswanathan et al., 2010).

Within these rural communities, women face the most difficult challenges (Germann et al., 2023; Tan, 2008; Weidner et al., 2010). In rural areas of India, traditional gender roles persist, hindering women's autonomy and empowerment (Viswanathan et al., 2021). Women in these rural areas may be illiterate with limited exposure to business activities (Venkatesh et al., 2017). Initiatives like Unilever's Project Shakti<sup>2</sup> ("Energy") address these disparities by providing sustainable livelihood opportunities specifically for socially and economically disadvantaged rural women. The initiative turned these women into microentrepreneurs, defined as business owners associated with an organization seeking to deliver value to consumers in their surroundings by

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<sup>1</sup> In our paper, "backward" communities are referred to as "socially and economically disadvantaged" communities.

<sup>2</sup> <https://www.unilever.com/news/news-search/2019/becoming-a-micro-entrepreneur-in-rural-colombia/>.

addressing their small-scale needs (Hassan et al., 2023). These women microentrepreneurs improved their own income, health, hygiene, and education, showcasing the transformative potential of empowering rural women.

Recognizing the social and economic environmental challenges in emerging markets, several social enterprises such as the Digital Empowerment Foundation (DEF) have emerged (Smith et al., 2012). DEF initiated the Soochnapreneur<sup>3</sup> program (“Information Entrepreneurship”), which aims to provide last-mile access to information in rural India. Soochnapreneurs are rural microentrepreneurs who provide value to rural consumers by identifying, contacting, creating awareness of government welfare programs, and facilitating the acquisition or enrollment in these programs. Value is delivered to consumers in terms of helping them access *financial benefits* through welfare programs as well as providing *convenience benefits* by saving them time (e.g., a consumer may lose a day’s wage because they have to take time off to travel and submit documents in-person to the nearest government office).

Initially, the program mobilized mostly rural men from socially and economically disadvantaged communities. However, the first few rural women microentrepreneurs were profoundly empowered by their new roles, cherishing the identity and recognition they received. One woman microentrepreneur mentioned, “*Rather than being known as someone’s daughter, wife, or daughter-in-law, I am well-known myself and have my own identity.*” These few women microentrepreneurs were “*extremely grateful to DEF for giving them the opportunity, identity, and recognition*” to help people.

Upon realizing the potential impact of empowering rural women microentrepreneurs and aiming to ensure the presence of gender equality in their entrepreneurship model, in early 2018, DEF expeditiously recruited a large group of rural women microentrepreneurs across about half of its locations. Existing literature focusing on gender differences suggests that due to culturally prescribed stereotypes and expectations, women tend to show more communal attributes, such as care and compassion, than men (Hmieleski & Sheppard, 2019; Santana & Morwitz, 2021; Varma et al., 2023; Viswanathan et al., 2010). In the context of rural entrepreneurship in emerging markets, the existing marketing literature has studied the influence of empowering female entrepreneurs through female mentors in emerging markets (Germann et al., 2023) and on marketplace literacy’s impact on the psychological well-being of women consumers in low-access subsistence marketplaces (Viswanathan et al., 2021). However, the impact of hiring more rural women microentrepreneurs on consumer acquisition

and value delivered to consumers remains less understood. Our research seeks to fill this gap in the marketing literature. Specifically, we address the following research questions:

1. *How does the increase in rural women microentrepreneurs impact the acquisition of and overall value delivered to consumers in rural areas?*
2. *What is the value delivered to women consumers in rural areas because of involving more women compared to men microentrepreneurs?*
3. *How does the presence of a significant number of women microentrepreneurs influence men consumers and the performance outcomes of men microentrepreneurs?*

These research questions aim to provide insights into the multifaceted impact of a social enterprise’s intervention on gender equality, women empowerment, consumer acquisition, and value delivery within the context of rural entrepreneurship in emerging markets (Agarwal et al., 2020; Germann et al., 2023; Viswanathan et al., 2021). To investigate our research questions, we employ a difference-in-differences model using a quasi-experiment, an empirical approach that has been increasingly used to study various marketing-related outcomes (Goldfarb et al., 2022; Narang & Shankar, 2019). We supplemented this analysis with qualitative interviews with both men and women microentrepreneurs.

We make two important contributions to the growing literature on the intersection of marketing, social entrepreneurship, and gender dynamics (Berger et al., 2006; Germann et al., 2023; Hassan et al., 2023; He et al., 2008; Peñaloza et al., 2023; Srivastava et al., 2023; Varma et al., 2023). Given the limited academic research and varying perspectives among practitioners and social organizations, there exists uncertainty about the marketing impact of recruiting rural women. Our study is the first to examine how an intervention in recruiting a group of rural women microentrepreneurs contributes to a positive change in the marketing performance of a social enterprise, specifically in terms of better consumer acquisition and value delivery to consumers (Bendle et al., 2016). While extant research highlights the importance of global developmental initiatives focused on mobilizing and empowering women in emerging markets (e.g., Germann et al., 2023), we extend the existing marketing literature by showcasing the impact of recruiting rural women microentrepreneurs on the acquisition of and value delivered to consumers. In doing so, we contribute to the literature on marketing and society (Achrol & Kotler, 2012; de Ruyter et al., 2022; Sheth & Sisodia, 2005; Wilkie & Moore, 2012).

Second, we provide empirical evidence to suggest that women microentrepreneurs strongly influence men

<sup>3</sup> <https://www.soochnapreneur.in/about-the-programme/>.

microentrepreneurs to have a stronger positive impact on value delivered to their consumers. This underscores the importance of gender equality and inclusivity in nurturing positive societal impact. Recognizing and promoting the important role women microentrepreneurs play in shaping social outcomes not only empowers them individually but also contributes to the overall growth and sustainability of social enterprises.

Compared to developed markets, social enterprises, and women microentrepreneurs are relatively newer concepts in many emerging markets (Bhatt et al., 2019; Venkatesh et al., 2017). In rural areas of India where women have historically been *unrecognized* formally (Viswanathan et al., 2010), women who become microentrepreneurs in social enterprises are empowered, socially included, and *recognized* as relevant (Datta & Gailey, 2012). Our study sheds light on how these women microentrepreneurs make a positive impact on society.

The rest of the paper is structured as follows. First, we discuss the relevant literature on gender differences and rural entrepreneurship in emerging markets. Second, we elaborate on the context of DEF's Soochnapreneur program, and the intervention of hiring women. Third, we discuss the data, sample, econometric model, and results. We end by discussing our study's contributions to marketing theory and practice.

## Relevant literature

Our study builds on the existing literature on gender differences and rural entrepreneurship in emerging markets. Existing literature on gender differences, informed by social role theory, suggests that due to culturally prescribed stereotypes and expectations, women tend to show more communal attributes, such as care and compassion, than men (Hmieleski & Sheppard, 2019; Santana & Morwitz, 2021; Schul & Wren, 1992; Varma et al., 2023; Viswanathan et al., 2010).

Traditional gender roles persist in rural areas of emerging markets, where women are expected to embody communal roles emphasizing supportiveness, while men are supposed to be dominant, competitive, decision-makers, and breadwinners (Joshi, 2015). Consequently, women who become microentrepreneurs in a social enterprise could primarily allocate their time towards caregiving and creating welfare for the community (Viswanathan et al., 2010).

A recent study by Germann et al. (2023) examines women mentors and microentrepreneurs, revealing that sales and profits grew among women microentrepreneurs under the guidance of women mentors. In addition, women mentors exhibited more positive engagement with the women

entrepreneurs by being more supportive and encouraging. Individuals who share a similar gender identity are more likely to understand, empathize, and value the experiences, challenges, and perspectives of individuals of the same gender (Dennehy & Dasgupta, 2017).

The presence of women in an organization can have positive spillovers on the overall performance of other employees as well (Varma et al., 2023). Significant representation of women microentrepreneurs can positively influence men microentrepreneurs to recognize the importance of social service and adjust their focus accordingly to align with community expectations and norms.

That said, while the existing literature implies that hiring more rural women microentrepreneurs could impact the social performance of the social enterprise, it is not clear, a priori, how an increase in women microentrepreneurs impacts the acquisition of consumers, value delivered to consumers, and the performance of men microentrepreneurs. Therefore, we employ a quasi-experiment to explore the impact of women microentrepreneurs on the social performance of the social enterprise. We illustrate the contribution of our research relative to related marketing literature in Table 1.

## Context

### DEF's purpose and soochnapreneur program

Digital Empowerment Foundation (DEF) is a nonprofit social enterprise dedicated to empowering marginalized communities by facilitating access to better healthcare, education, skills, and livelihood opportunities through digital literacy and digital tools. However, significant government initiatives aimed at supporting underprivileged populations are often hampered by corruption and inefficiencies in emerging markets (Singh, 2017), hindering rural communities from accessing these benefits.

Recognizing this gap, DEF initiated Soochnaseva (information service) program, partly funded by the European Union, aimed at improving access to public welfare programs and services. By engaging locals as Soochnna (Information) Employees, DEF facilitated the acquisition of consumers living in socially and economically disadvantaged communities and helped them enroll in government-sponsored programs<sup>4</sup> and entitlements. Soochnaseva employees charge

<sup>4</sup> The Indian government has several welfare programs for the poor and marginalized, and for groups in society, such as women, children, and backward castes. Some examples of such programs are free health insurance for those living in poverty, financial and resource assistance for a widow's daughter's marriage, school fee reimbursement, and scholarship for female youth. For instance, the Atal Bihari Vajpayee Child Health and Nutrition Mission is a government program whose

**Table 1** Contribution relative to relevant marketing literature

Paper	Purpose	Study context	Key findings
Ander-son et al. (2018)	What is the impact of improvements in marketing skills compared to financial skills among small-scale entrepreneurs?	Small-scale entrepreneurs in South Africa	Businesses significantly improved profitability through both types of business skills training. The marketing group focused on growth, achieving higher sales, optimizing inventory, and expanding employee hiring, while the finance group emphasized efficiency with significantly lower costs.
Viswana-than et al. (2021)	What is the impact of marketplace literacy on well-being?	Consumers and microentrepreneurs in India and Tanzania	Marketplace literacy improves psychological well-being and consumer outcomes associated with well-being, such as consumer confidence and decision-making ability. This effect is particularly pronounced among subsistence consumers with limited marketplace access. Additionally, for individuals with higher marketplace access, marketplace literacy leads to improved entrepreneurial outcomes related to well-being, such as starting a microenterprise.
Hassan et al. (2023)	Why do some microentrepreneurs engage in innovation in their marketing practices?	Grocery retailers in Cairo, Egypt	Microentrepreneurs who manage stores without actual ownership are considerably less likely to innovate in their marketing practices compared to those who lease their stores.
Germann et al. (2023)	Do female mentors improve the performance of female microentrepreneurs?	Microentrepreneurs in Uganda	Sales and profits experienced growth among female entrepreneurs under the guidance of a female mentor.
Our Study	What is the impact of hiring rural women microentrepreneurs on the acquisition of and value delivered to consumers?	Microentrepreneurs in rural India	Rural women microentrepreneurs improved acquisition of and value delivered to consumers. Moreover, they improved the performance of men microentrepreneurs.

based on DEF guidelines to ensure affordability for consumers and strictly adhere to anti-bribery policies, distinguishing them from local government agents.

However, DEF identified limitations in the employee model, particularly in terms of income potential and financial independence for rural individuals. To address these concerns, DEF started a new program called Sochnapreneur, co-funded by Qualcomm, a large multinational corporation creating semiconductors, software, and services related to wireless technology. Unlike the earlier employee model, the entrepreneurship model imposes no limitations on income-earning potential and gives microentrepreneurs more financial independence. DEF also benefits from limited liability in managing microentrepreneurs. The program continues the organization's goals of facilitating the sharing of information on government-sponsored programs and entitlements for consumers in socially and economically disadvantaged communities.

DEF provides their microentrepreneurs with digital equipment and a multilingual mobile application and trains them on how to use the equipment and app. DEF conducts training sessions to develop entrepreneurs' skills in reaching out to potential consumers, creating awareness about relevant information services and government programs to these consumers.

The microentrepreneur earns income by charging an enrollment fee of INR 200 (\$2.40) for preparing and submitting the required government documents for the rural consumers. The fee is nominal considering the overall financial value delivered to consumers through access to government

welfare programs. Additionally, the entrepreneur can earn income by using enterprise-supplied digital equipment to pursue their own entrepreneurial activities. Unlike in the earlier employee model, this practice is acceptable in the entrepreneur model because it does not violate any DEF policy. Microentrepreneurs generate additional income through conventional or innovative use of their digital resources, such as offering services like wedding videography, school photocopying, digital photography, online form filling, and digital training.

### The intervention of hiring women

In early 2018, DEF recruited more women microentrepreneurs to tackle the low ratio of women-to-men microentrepreneurs. This intervention of hiring aimed to challenge and expand the traditional roles of women in rural India by empowering them with the tools and opportunities to become microentrepreneurs. This shift not only alters local perceptions of gender roles but also enables women to adopt new, economically empowering social roles. The intervention of hiring women microentrepreneurs was a major change from DEF's earlier approach in which it recruited mostly men microentrepreneurs. However, the change in recruiting aligns with DEF's ongoing mission to promote gender equality and empower women. Furthermore, the change provides a quasi-experiment setting with both treatment and control groups.

DEF recruited more women microentrepreneurs in socially and economically disadvantaged Indian districts of Alwar, Guna, and Ranchi. The locations within these three districts, called *panchayats*, were randomly picked for the

goal is to eradicate malnutrition and improve children's nutritional status.

intervention, and the recruitment of women microentrepreneurs commenced. A panchayat is a basic unit in the Indian administrative system for rural areas, comprising a cluster of villages, with a population of about 5,000 for a small panchayat and about 20,000 for a large one. However, DEF did not change its recruiting policy in the other three districts of Bargarh, Barmer, and West Champaran. The panchayats in these latter three districts largely constitute our control group.

All six districts are designated socially and economically disadvantaged in India and have similar socioeconomic profiles. Whereas the control districts had a gender ratio of one woman to every nine men, in the treated districts the intervention led to a gender ratio of seven women to every three men. The overall gender proportion of women to men across all districts after the intervention was four women to six men for every ten microentrepreneurs.

## Data, sample, and econometric models

We use data from the in-house developed multilingual mobile application, which microentrepreneurs use to enter enrollment or acquisition data for their consumers. DEF closely monitors microentrepreneurs and evaluates them based on the number of rural consumers they register and enroll in government programs. To verify the data, district coordinators frequently visit microentrepreneurs and connect with local enrollees to confirm enrollments as well as self-reports of their income.

The mobile application data was received in a mix of the country's two official languages: English and Hindi. One of the co-authors translated, interpreted, and validated the accuracy of the data received in Hindi with DEF's support. We obtained data on the demographics of the microentrepreneurs and the consumers they acquired on a daily basis. In addition, we obtained data on government programs linked to each rural consumer and the status of whether the application was approved, pending, or rejected. Our data consists of observations for 285 unique microentrepreneurs (61 from Alwar, 13 from Bargarh, 38 from Barmer, 73 from Guna, 63 from Ranchi, and 37 from West Champaran) from January 2017 to December 2019. The microentrepreneurs belong to 164 panchayats, out of which 91 are treatment locations and 73 are control locations.

## Empirical strategy

To examine the impact of the intervention, where more women microentrepreneurs were recruited, we use a difference-in-differences (DID) approach (Angrist & Pischke, 2008; Narang & Shankar, 2019). The DID approach allows

us to examine nonexperimental variations by comparing the pre-and post-intervention outcomes for locations (panchayats) where the intervention was implemented and similar locations (panchayats) where no intervention took place. The 91 panchayats where the emphasis was given on the intervention are considered our treatment locations. The remaining 73 panchayats where the intervention did not happen are the control locations. Consistent with existing marketing literature, our DID is slightly staggered (e.g., Berman & Israeli, 2022), in that the intervention was implemented in a phased manner across two months. Based on the data shared by DEF, we observe a jump in the proportion of women microentrepreneurs from period 16 (April 2018) in Alwar and Guna, and period 18 (June 2018) in Ranchi. The periods before the jump in the women to men microentrepreneur ratio are considered 'pre-intervention' and the periods after are 'post-intervention.' For control locations, period 16 onwards is considered as 'post-intervention.' For each observation, a value of one is assigned if it occurred in the post-intervention period, and zero if it took place in the pre-intervention period. Similarly, the observation is identified as belonging to a treatment or control location based on the panchayat in which the microentrepreneur is situated. Figure 1 illustrates the intervention timeline and corresponding periods.

## Dependent variables

Our dependent variables are *consumer acquisition* and *value delivered to consumers*. *Consumer acquisition* is measured as the number of new rural consumer(s) each microentrepreneur enrolled in a government program each month (or period).

Value is delivered to consumers in two ways: (1) helping consumers access *financial benefits* through welfare programs and (2) providing *convenience benefits* by saving consumers time as they do not have to lose their daily wage by taking a day off to travel and submit documents to the government office. Accordingly, we measure *value delivered to consumers* as the amount that a microentrepreneur can generate for their men and women rural consumers by enrolling them in government programs every month. This value is largely comprised of the financial benefits that the consumer receives from enrollment in the government program.

Our dependent variables used for the main regression analysis are three-month averages of the (1) number of new consumers acquired and (2) value delivered to these consumers by microentrepreneurs. The three-month average includes the average of the current period and the next two periods. This makes the independent variable a lagged

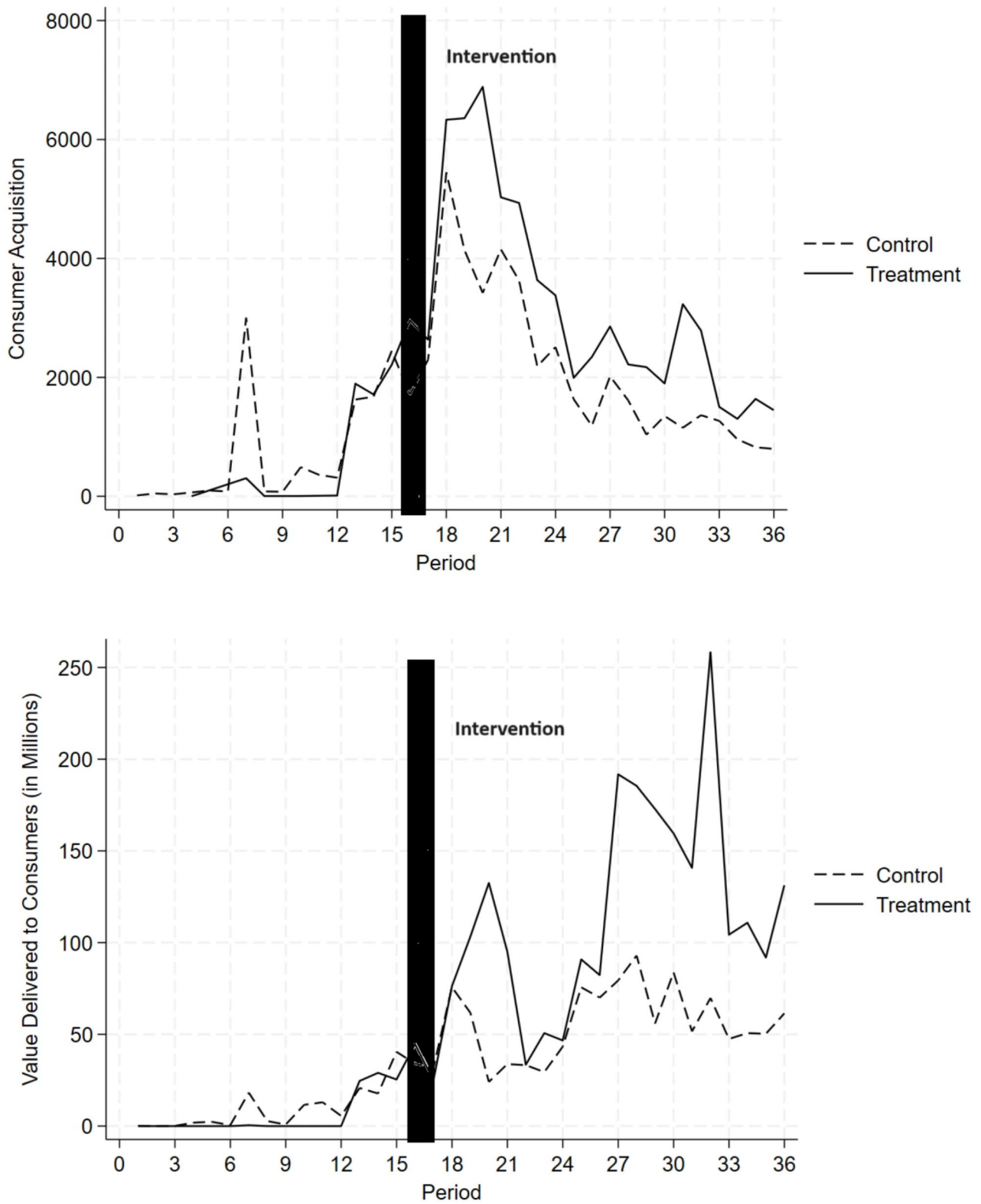


Fig. 1 Consumer acquisition and value delivered to consumers in treatment and control locations

variable, which rules out possible reverse causality (Vadakepatt et al., 2022).

### Independent variable

To employ the DID method, we create a dummy variable *Treatment* equal to one for observations in the locations where the intervention of hiring a group of women microentrepreneurs happened and zero for the remaining locations.

**Table 2** Variable operationalization

Variable	Definition/ Operationalization
Consumer acquisition	Number of unique rural consumers that the microentrepreneur registered for the first time in that period.
Value delivered to consumers	The total amount of value that the microentrepreneur was able to generate for the rural consumers from enrollment in the government program for that period. Value delivered to consumers is largely comprised of the monetary benefits received from the government programs.
Women consumer acquisition	Number of consumers enrolled; if the consumer was a woman.
Value delivered to women consumers	Financial benefits generated; if the consumer was a woman.
Men consumer acquisition	Number of consumers enrolled; if the consumer was a man.
Value delivered to men consumers	Financial benefits generated; if the consumer was a man.
Pre/Post dummy	Before the intervention (recruiting a group of women microentrepreneurs), the variable is 0, and after the intervention, the variable equals 1.
Treatment/Control	All microentrepreneurs located in panchayats that were not part of the intervention equals 0, and microentrepreneurs that were located in panchayats where the intervention took place equals 1.
Microentrepreneur age	The age of the microentrepreneur.
Consumer married	The proportion of consumers enrolled in government programs that were married.
Consumer employed	The proportion of consumers enrolled in government programs that were employed.
Consumer vulnerability	The proportion of consumers enrolled in government programs who came from a vulnerable background, such as bonded labor, deserted from family, natural calamity, scavenger, victims of crime or harassment, or pregnant.
Consumer disability	The proportion of consumers enrolled in government programs that were disabled like mental, hearing, movement, speech, and visual.
Consumer sickness	The proportion of consumers enrolled in government programs that were ill, aid, cancer, and leprosy.

Then we define another indicator variable *Post* which is given a value of one for observations related to periods after an increase in the women-to-men microentrepreneur ratio in the treatment locations and zero for remaining observations. An interaction variable, *Treatment X Post*, captures the intervention effects of recruiting a group of rural women microentrepreneurs and is our main variable of interest.

### Control variables

We control for both microentrepreneur and consumer characteristics. We control for the age of the microentrepreneur as age can influence the experience, knowledge, and energy level of the microentrepreneurs. We also add controls for consumers like their *marital status*, *employment status*, and whether they have any kind of *disability*, *sickness*, or *vulnerability* as there may be specific government welfare programs pertaining to these factors. Moreover, we include dummy variables that capture time-invariant differences between the locations with unique cultures and languages. In addition, the dummy variables also control for other differences between locations, such as prior intervention experience, which might increase awareness among potential consumers. Furthermore, we include binary variables for each year and month. We present the operationalization of variables in Table 2 and descriptive statistics and correlations among variables in Table 3.

### Econometric models

We created panel data at the microentrepreneur-month level. We collected data pertaining to each microentrepreneur for every month, including the number of unique consumer acquired split into the number of women and men consumers, and value delivered during that month for women and men consumers. We identified the location (panchayat) the microentrepreneur belonged to and accordingly assigned the value of 1 to the indicator variables *Treatment*, if they belong to a treatment panchayat; or 0 if they belong to a control panchayat. Depending on whether the month is pre-intervention or post-intervention, we assign a value of 1 or 0 to the indicator variable *Post*. An interaction variable, *Treatment X Post*, captures the intervention effects of increasing the ratio of women microentrepreneurs and is our primary variable of interest.

In our experimental setting, we do not observe the same panchayats in both periods, before and after intervention. Some of the panchayats are added after the intervention and are not the same all through the 36 months. Hence, considering a pooled OLS is appropriate in our context (Wooldridge, 2010). We estimated a pooled ordinary least squares (OLS) model with location, year, and month dummies in addition

**Table 3** Descriptive statistics and correlation among variables

Variable	Mean	Std. dev.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Consumer acquisition	38.9	36											
(2) Women consumer acquisition	19.5	17.24	0.9										
(3) Men consumer acquisition	21.1	21.59	0.94	0.71									
(4) Value delivered to consumers	1,715,702	5,765,331	0.3	0.23	0.31								
(5) Value delivered to women consumers	830069.5	2,543,030	0.27	0.22	0.28	0.98							
(6) Value delivered to men consumers	1,188,043	3,872,019	0.3	0.23	0.32	0.99	0.94						
(7) Microentrepreneur age	28.3	5.58	0.05	0.04	0.05	-0.06	-0.07	-0.05					
(8) Consumer married	0.65	0.27	-0.07	-0.08	-0.04	-0.12	-0.11	-0.12	0.1				
(9) Consumer employed	0.1	0.23	0	-0.05	0.02	-0.04	-0.04	-0.04	-0.12	0.09			
(10) Consumer vulnerability	0.03	0.12	-0.09	-0.08	-0.09	-0.03	-0.02	-0.03	0.04	0.13	0.01		
(11) Consumer disabled	0.01	0.06	-0.05	-0.04	-0.05	-0.02	-0.02	-0.03	0	0.02	-0.01	0.06	
(12) Consumer sickness	0.1	0.28	0	-0.06	0.05	-0.01	-0.02	0	0.13	0.09	-0.1	0.04	0.21

to our control variables. The location dummy controls for time-invariant location-level omitted variables, and year and month dummy variables account for time-varying omitted variables that would equally affect all locations (Angrist & Pischke, 2008). Our quasi-experiment design enables us to address endogeneity concerns (Duncan et al., 2004; Gippel et al., 2015). The means of the treatment and control groups for our dependent variables are not statistically different during the pre-intervention period. We check for parallel trends, which is a necessary condition in DID estimations that assumes that in the absence of the intervention, the difference between the treatment and control groups is constant over time. Our analysis shows that before the intervention, there was no statistical difference among the dependent variables between the treatment and control locations.

We employ the following specifications and conduct a DID regression on our dependent variables: consumer acquisition and value delivered to consumers. Additionally, we disaggregate the dependent variable by the gender of the consumer.

(1)  $Consumer\ acquisition = \beta_0 + \beta_1 * Treatment * Post\ indicator + \beta_2 * Post\ indicator + \beta_3 * Treatment + \beta_4 * Microentrepreneur\ age + \beta_5 * Proportion\ of\ married\ consumers + \beta_6 * Proportion\ of\ employed\ consumers + \beta_7 * Proportion\ of\ vulnerable\ consumers + \beta_8 * Proportion\ of\ disabled\ consumers + \beta_9 * Proportion\ of\ sick\ consumers + \beta_{10} * Location\ dummy + \beta_{11} * Year\ dummy + \beta_{12} * Month\ dummy + \epsilon.$

(2)  $Value\ delivered\ to\ consumers = \beta_0 + \beta_1 * Treatment * Post\ indicator + \beta_2 * Post\ indicator + \beta_3 * Treatment + \beta_4 * Microentrepreneur\ age + \beta_5 * Proportion\ of\ married\ consumers + \beta_6 * Proportion\ of\ employed\ consumers + \beta_7 * Proportion\ of\ vulnerable\ consumers + \beta_8 * Proportion\ of\ disabled\ consumers + \beta_9 * Proportion\ of\ sick\ consumers + \beta_{10} * Location\ dummy + \beta_{11} * Year\ dummy + \beta_{12} * Month\ dummy + \epsilon.$

## Results

The results of the main regression at the microentrepreneur level with three-period (month) average performance appear in Table 4. Our first research question concerns the impact of rural women microentrepreneurs on consumer acquisition. The coefficient in Model 1 of Table 4 shows that microentrepreneurs in treatment locations acquire approximately six more new consumers compared to control locations ( $\beta = 5.948, p < 0.05$ ). Model 2 of Table 4 shows that treatment locations, on average, deliver INR 991,755.2 (\$11,915) more value to their consumers than the control

**Table 4** Main regression results at the microentrepreneur-level with three-period average performance

	(1)	(2)	(3)	(4)
	Consumer acquisition	Value delivered to consumers	Women consumer acquisition	Value delivered to women consumers
Treatment X Post	5.948** (2.819)	991755.2*** (380009.2)	0.842 (1.506)	453221.6** (205226.8)
Post	17.97*** (3.071)	-151078.2 (692245.7)	9.359*** (1.599)	-114,898 (348961.1)
Treatment	7.157** (2.958)	1347973.5*** (375750.7)	6.289*** (1.556)	775689.6*** (200973.2)
Microentrepreneur age	0.0834 (0.131)	-78992.4*** (29029.6)	0.0585 (0.0687)	-45807.7*** (13256.0)
Consumer married	-1.429 (2.584)	-3869833.2*** (1129068.0)	0.859 (1.499)	-1925787.2*** (577961.9)
Consumer employed	-2.813 (2.548)	-1270862.6*** (399276.2)	-4.748*** (1.333)	-386714.2** (193265.3)
Consumer vulnerability	-16.47*** (5.022)	-954073.7 (760342.3)	-6.763* (2.624)	-552622.4 (378851.2)
Consumer disabled	1.173 (10.426)	-1645756.6 (1514920.0)	9.016 (5.087)	-417758.3 (660187.8)
Consumer sickness	-0.385 (2.501)	48861.4 (264153.4)	-3.092** (1.083)	8696.5 (126220.4)
Location FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Month FE	YES	YES	YES	YES
Constant	14.09** (6.182)	3799838.6*** (1350849.0)	6.375* (3.165)	2027711.8*** (640417.7)
N	2572	1725	2264	1403
Adj R Square	0.232	0.0859	0.216	0.0962

All tests are two-tailed. Standard errors in parentheses

Notes: \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

locations ( $\beta = 991755.2$ ,  $p < 0.01$ ). These increases in social performance are consistent with social role theory, wherein women, due to culturally prescribed stereotypes and expectations, tend to show more communal attributes than men (Hmieleski & Sheppard, 2019; Santana & Morwitz, 2021; Varma et al., 2023; Viswanathan et al., 2010). However, to better understand why, we conversed with 14 consumers (eight men and six women). We discovered that women microentrepreneurs were more proactive and engaged in assisting consumers compared to men. In one instance, a woman consumer's father-in-law had an accident, and the woman microentrepreneur came, informed them about insurance, and got them the benefits. The woman consumer said, "khud aake boli aur paisa dilwayi," which translates as *she [the woman microentrepreneur] came on her own merit and helped us get the money*. Another consumer mentioned a different woman microentrepreneur, stating, "ghar pe aake samjhaya" which translates to *she comes home and explains*. Such proactive engagement fostered stronger relationships and better understanding with their consumers, thereby increasing both consumer acquisition and value delivered to

consumers. By contrast, consumers explain that men microentrepreneurs would *come when I call him* ("bulane se aa jate hain"), showing completion of the task, but with a less proactive approach.

Our second research question concerns the specific impact on rural women consumers as a result of hiring more rural women microentrepreneurs. Model 3 of Table 4 shows that microentrepreneurs in treatment locations had a positive, but not statistically significant impact on acquiring women consumers than in the control locations ( $\beta = 0.842$ ,  $p > 0.10$ ). We explain this finding in detail in the following section, where we discuss the effect of the treatment on male consumer acquisition. Model 4 of Table 4 shows that microentrepreneurs in treatment locations deliver around INR 453,221.6 (\$5,445) more value for women consumers than the control locations ( $\beta = 453221.6$ ,  $p < 0.05$ ). This result is consistent with the concept of shared identity (Dennehy & Dasgupta, 2017). Individuals who share a similar gender identity are more likely to understand, empathize, and value the experiences, challenges, and perspectives of individuals of the same gender (Dennehy & Dasgupta, 2017;

Germann et al., 2023). Since women microentrepreneurs often promote their services in the same location that they were brought in from, rural women consumers in that location may be more open and comfortable disclosing their personal problems to these trusted women microentrepreneurs. Through these conversations, women microentrepreneurs are able to find more financial benefits for these women consumers from various government programs.

Our third research question examines how the presence of women microentrepreneurs influences men consumers and the performance outcomes of men microentrepreneurs. Model 1 of Table 5 shows that microentrepreneurs in treatment locations had a positive and statistically significant impact of acquiring men consumers compared to the control locations ( $\beta = 5.195.1, p < 0.01$ ). While the intervention has certainly increased the overall consumer acquisition, we see this largely are male consumers, but not women consumers as shown earlier. Based on our conversations with consumers, this can largely be explained due to the embedded social norms practiced in rural India. Unless government programs

necessitate the involvement of women (e.g., the application must be in their name), it is likely that the applicant will be a male head of the household. ‘Household-oriented’ government programs related to healthcare, rural development, and water and sanitation, are often issued to the male members even though the benefits are to the women in the household. Women microentrepreneurs might be targeting the men consumers recognizing their higher likelihood of enrollment. Moreover, even if women consumers are approached, they may inform the male household heads for enrollment.

Model 2 of Table 5 reveals that microentrepreneurs in treatment locations deliver around INR 780,359.1 (\$9,401) more value for men consumers than the control locations ( $\beta = 780359.1, p < 0.05$ ). This result aligns with our argument that women microentrepreneurs are more proactive towards increasing their social impact and consequently deliver greater value to their consumers when compared to men microentrepreneurs.

Table 6 presents the impact of hiring women microentrepreneurs on the performance of men microentrepreneurs. Model 2 of Table 6 shows that men from the locations where both women and men work together delivered INR 2,008,053.1 (\$25,100) more value for their consumers than men in locations with primarily men ( $\beta = 2008053.1, p < 0.01$ ). The presence of significant women microentrepreneurs may prompt men microentrepreneurs to shift their focus toward social service for several reasons. First, as the community becomes accustomed to women microentrepreneurs prioritizing social service, there may be growing expectations for men to also participate in similar activities to maintain community cohesion and goodwill. Second, men may feel compelled to compete with women microentrepreneurs in providing social services, leading to an increase in their own efforts in this area. Third, men may recognize the positive reputation and recognition garnered by women microentrepreneurs for their social contributions and seek to emulate this behavior to enhance their own standing within the community. Overall, the presence of significant women microentrepreneurs can influence men microentrepreneurs to recognize the importance of social service and adjust their focus accordingly to align with community expectations and norms.

Moreover, as shown in Model 3 of Table 6, men from the locations where both women and men work together delivered INR 859,616.3 (\$10,745) more value for women consumers than men in locations with primarily men ( $\beta = 859616.3, p < 0.05$ ). For many government programs, men microentrepreneurs have been known to have a preferential bias towards targeting men consumers. Further, men microentrepreneurs are less likely to target women consumers, even for women-focused programs because of the lack of understanding. The presence of women microentrepreneurs

**Table 5** Main regression results at the microentrepreneur-level with three-period average performance (men consumer acquisition and value delivery)

	(1)	(2)
	Men consumer acquisition	Value delivered to men consumers
Treatment X Post	5.195*** (1.617)	780359.1** (306992.6)
Post	6.415*** (2.429)	-358614.7 (540483.4)
Treatment	1.050 (1.777)	1154773.2*** (301430.4)
Microentrepreneur age	0.00500 (0.0850)	-59084.8*** (20856.1)
Consumer married	-2.743 (1.563)	-3223666.7*** (933547.4)
Consumer employed	3.827** (1.703)	-771482.8** (288325.2)
Consumer vulnerability	-5.400 (2.813)	-846076.9 (542433.7)
Consumer disabled	-13.34 (6.944)	-1762651.3 (1296802.8)
Consumer sickness	-0.291 (1.369)	320466.0 (208211.6)
Location FE	YES	YES
Year FE	YES	YES
Month FE	YES	YES
Constant	10.03*** (3.831)	2939195.2*** (991749.0)
N	1729	1403
Adj R Square	0.189	0.106

All tests are two tailed. Standard errors in parentheses

Notes: \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

**Table 6** Comparison of men in locations with primarily men (men in control=0) with men in women and men locations (men in treatment=1)

	(1)	(2)	(3)
	Consumer acquisition	Value delivered to consumers	Value delivered to women consumers
Men in Treatment X Post	5.670 (4.745)	2008053.1*** (509114.1)	859616.3*** (292181.0)
Post	18.44*** (3.510)	999294.4** (470022.1)	450415.8 (260160.4)
Men in Treatment	3.101 (4.513)	-214000.7 (443047.8)	211655.6 (291125.8)
Microentrepreneur age	-0.0699 (0.172)	9470.2 (18494.7)	-12040.8 (9578.0)
Consumer married	5.275 (3.366)	-1179221.9** (458989.8)	-828216.4*** (289722.2)
Consumer employed	-3.909 (3.416)	-204959.3 (316417.6)	14186.0 (192551.8)
Consumer vulnerability	-6.555 (7.440)	-2672841.0*** (513269.5)	-1280467.7*** (289843.9)
Consumer disabled	-12.64 (11.71)	-1281018.7 (1232617.4)	91171.5 (554058.6)
Consumer sickness	6.916** (3.350)	-232532.8 (277991.7)	-332497.3** (129079.9)
Location FE	YES	YES	YES
Year FE	YES	YES	YES
Month FE	YES	YES	YES
Constant	16.24** (7.120)	832815.3 (680713.0)	825672.7** (379424.7)
N	1403	953	735
Adj R Square	0.212	0.138	0.180

All tests are two tailed. Standard errors in parentheses

Notes: \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

may create knowledge spillovers and understanding in men microentrepreneurs. In addition, when women microentrepreneurs joined, there was some training provided by the men, and in some cases, there may be reciprocity in the collaborative relationships and comfort in now men are receptive to training about women programs. Women increased awareness of social needs and issues among men microentrepreneurs. Finally, along the competitive lines, men recognize the potential market of catering to women consumers and may seek them to stay competitive with women microentrepreneurs. Hence, our finding.

## Qualitative interviews with microentrepreneurs

To gain deeper insights into the phenomena, we conducted fourteen qualitative interviews with microentrepreneurs (seven men and seven women). The summaries and key themes that emerged from these microentrepreneur interviews are presented in Tables 7 and 8. Our microentrepreneur interviews suggest that given that social enterprises aim to benefit society, women microentrepreneurs with communal tendencies are more oriented towards fulfilling the enterprise's social mission as detailed in Table 7 (see Row 5). In rural areas, social norms often discourage women from assuming the role of the breadwinner (Venkatesh et al., 2017). In contrast, men microentrepreneurs who bear the financial responsibility for their families are likely to prioritize entrepreneurial activities differently (see Table 8, Rows 5 & 6). Consequently, women microentrepreneurs still prioritize their time towards caregiving and household responsibilities (Viswanathan et al., 2010). This opportunity enabled them to embrace a different identity (see Table 7, Row 1; Table 8, Row 1) and gain self-confidence (see Table 7, Row 2), thereby reinforcing their motivation to assist marginalized groups (see Table 7, Row 5, WM3; Table 8, Row 2). Therefore, with a sentiment stronger than men microentrepreneurs, women microentrepreneurs acquire more consumers and deliver greater value when compared to their male counterparts.

Coming from similar socio-cultural backgrounds, women microentrepreneurs may also be more receptive to the problems that women consumers are facing due to their shared experiences, illustrated through two salient examples below from conversations with women consumers. Some of the issues that girls in Indian villages face are of an intimate nature. For example, school dropout rates among girls after attaining puberty are quite high. One of the main reasons is related to menstrual hygiene (Garg et al., 2012). Over and above several unfounded myths associated with menstruation, many schools do not have separate toilets for boys and girls, which makes it difficult for girls to attend school on specific days. It is difficult for adolescent girls to discuss such issues with men, as it is not socially accepted yet and, in some cases, not understood. If the issue can be shared, the microentrepreneur has an opportunity to find available and girl-specific government welfare programs designed to provide resources, such as subsidized sanitary napkins, reproductive health education, and bicycles to travel to and from school.

In another instance, if women want to start their own for-profit venture, they cannot do so due to the lack of access to funding. They may be hesitant to discuss these financial situations with their own family members due to potentially breaking the social norm of the woman's typical caregiver

**Table 7** Women empowerment insights – translated summaries and quotes from women microentrepreneurs' association with DEF

Key Phrases	Women microentrepreneurs associated with DEF
1. <i>Alag Pehchaan</i> Translation: Different Identity	<b>WM1</b> – <i>I am no longer identified as someone's daughter or wife. It is common for people to say 'WMI's ki ghar' or 'this woman's home' or as 'WMI's ka pati' or 'this woman's husband.' Others are identified through me now.</i> <b>WM2</b> – <i>People call me 'Kalyani' or 'Kalyan kari' which simply means a 'person who does good'. [These terms are also associated to prosperity and happiness from a Goddess]</i> <b>WM3</b> – <i>'Sare log hamara paas ate hai' or 'people come to me' whether they are male or female, young or old. they know me, they ask for my opinion. Even if my shop is closed, they come back the very next day.</i>
2. <i>Khud Par Yakeen</i> Translation: Self-Confidence	<b>WM5</b> – <i>People call me Internet 'Didi' or 'Big Sister' because I have 'Jaankaari' or 'knowledge.' I want the women of my village to avail all opportunities and be aware of their rights.</i> <b>WM7</b> – <i>I have overcome my nervousness and can talk confidently with men or seniors of the village. Now I feel as important as leaders when many people come to meet them.</i>
3. <i>Prerna</i> Translation: Role Model	<b>WM5</b> – <i>I am a role model for other women, who have been able to come out of the 'Purdah' or 'Veil' system, overcome inhibitions and run a profitable center. I inspire and advise other women to do the same.</i> <b>WM1</b> – <i>Society laughed at me initially, but now they realize what women can do. I take pride in the fact that some of them have even copied me by opening shops. Now I want to become a 'sarpanch' or 'village head' and will stand for elections in the coming years.</i>
4. <i>Imaandari</i> Translation: Integrity	<b>WM2</b> – <i>I am very proud of the fact that the rural consumers trust me more than e-Mitras (government agents who want kickbacks) and came only to us. They believe we can solve all their problems.</i> <b>WM5</b> – <i>The city's secretary has given me the job of managing widow's pension scheme in spite of eMitras being around.</i>
5. <i>Samaj Seva</i> Translation: Social Service	<b>WM6</b> – <i>'Paisa kamana' or 'earning money' is okay, but 'seva se jyada khushi milti hai' or 'I gain greater happiness from serving others.' I love the social service part of the job.</i> <b>WM7</b> – <i>The social work is more important than money. Money is not everything. I get people's blessings by helping them.</i> <b>WM3</b> – <i>I particularly like when I can help elderly people and get 'Bhoosurg ka aashriwad' or Blessing from Elders.</i> <b>WM4</b> – <i>I love the opportunity to serve others and share knowledge.</i>

Note: WM – Women Microentrepreneur

**Table 8** Comparison of themes distinguishing men and women microentrepreneurs

Key themes	Women microentrepreneurs	Men microentrepreneurs
1. Identity	DEF has given women microentrepreneurs a distinct identity that they cherish because of no longer being identified in terms of someone else. Others are identified through them.	This is not applicable for men microentrepreneurs, because their identity already pre-exists within the social norms of rural India.
2. Social recognition	Women microentrepreneurs are grateful for the association with DEF. They are knowledgeable and love the opportunity to serve others and share knowledge.	Men microentrepreneurs are proud of their association with DEF. Prior to DEF people hardly knew them, but now they are the go-to people in the village to solve consumers problems.
3. Breaking social norms	Women microentrepreneurs had an opportunity to break out of the outdated "purdah" system and financially support their family.	As breadwinners, there are not social norms broken for men microentrepreneurs, except that they are now open to women microentrepreneurs being around.
4. e-Mitra (government agents)	Consumers prefer to work with women microentrepreneurs over e-Mitras and have the perception they can solve all problems.	Comparison with e-Mitras came up, but in many cases, men microentrepreneurs can do work that other e-Mitras cannot do.
5. Balancing work and family	Women are multi-taskers, managing both work and home, which are often co-located. They get up early, finish their household chores and then open the shop which is in the house and work late.	Men spend their entire time in the center in order to increase their income. This is their full-time work and they typically do no spend time managing their household.
6. Earnings	Women are happy to earn to support their family, such as paying the tuition fees for their children to go to school. They value earning through serving.	In addition to the social work, men teach and use DEF's digital equipment for photographing a wedding, submitting a job application, or sell/repair phones and computers to earn more income.
7. Long-term goals	Women microentrepreneurs are passionate and want to continue working with DEF to make a social impact and provide education to children, employment to women, help family members, and expand their reach.	Most of the men microentrepreneurs want to grow with DEF and increase their earnings. They want to expand their business through building networks and subsequently hire employees.

role at home. These women may end up taking out high-interest loans from local lenders in exchange for their personal jewelry but can fall into a debt trap if their venture fails. As an alternative, there are several government

programs that help women become financially independent by giving them low-interest loans, but such information is not readily available to women. These women are afraid to discuss venture opportunities with men microentrepreneurs

for fear that they may reveal this information to their husbands or in-laws, ending their dreams prematurely. However, for women consumers, women microentrepreneurs embody sought-after values of having a different identity (see Table 7, Row 1) and self-confidence (see Table 7, Row 2) that emerged from breaking the social norm (see Table 8, Row 3). Such women consumers are more willing to discuss their aspirations with these role models (see Table 7, Row 2, WM5 & Row 2, WM5), and consequently, women microentrepreneurs will naturally emerge as advisors and confidants in order to help them (see Table 8, Row 7).

**Table 9** Main regression results including caste effect and controlling for religion

	(1)	(2)
	Consumer acquisition	Value delivered to consumers
Treatment X Post	7.662*** (2.962)	1265255.7*** (384088.1)
Muslim microentrepreneur	4.884*** (1.675)	-699444.9*** (222916.1)
Christian microentrepreneur	-14.99*** (3.021)	-2084872.6*** (452369.8)
Low caste effect	-3.466 (3.115)	-4383350.8*** (980659.4)
Same caste effect	-2.438 (1.948)	232347.6 (315247.2)
Post	18.05*** (3.036)	-64365.7 (659881.0)
Treatment	5.455 (2.791)	935249.2** (372469.7)
Microentrepreneur age	0.0584 (0.130)	-142029.0*** (38691.5)
Consumer married	-1.669 (2.557)	-3316933.8*** (971318.3)
Consumer employed	-2.540 (2.591)	-627864.6** (290876.0)
Consumer vulnerability	-15.08*** (5.063)	-208610.5 (808891.0)
Consumer disabled	5.130 (10.90)	-875139.8 (1607506.4)
Consumer sickness	-1.321 (2.557)	-517614.4 (295528.2)
Location FE	YES	YES
Year FE	YES	YES
Month FE	YES	YES
Constant	16.71** (6.893)	9364786.8*** (2266938.6)
N	2571	1725
Adj R Square	0.241	0.131

All tests are two tailed. Standard errors in parentheses

Notes: \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

## Additional analysis

To explore the impact of religion and social class (caste) of the entrepreneur on consumer acquisition and value delivered to consumers, we conducted additional analysis as shown in Table 9. We included a dummy variable equal to one or zero depending on whether the microentrepreneur was Hindu, Muslim, or Christian (the baseline comparison was to Hindu). We also included a dummy variable equal to one or zero depending on whether the microentrepreneur was classified as from a Low caste, and whether the microentrepreneur and consumer are from the Same caste. After including both religion and caste effects, the main effects of our intervention of women microentrepreneurs on consumer acquisition and value delivered to consumers remain statistically significant at  $p$ -values less than 1% (see first row of *Treatment X Post*).

We find that, on average, Hindu microentrepreneurs are less likely to acquire consumers than Muslim microentrepreneurs, but more likely to acquire consumers than Christian microentrepreneurs. However, when it comes to value delivered to consumers, Hindu microentrepreneurs provided significantly more benefits than Muslim and Christian microentrepreneurs. When it comes to caste, we find one interesting finding, as presented in Table 9. If the microentrepreneur is of a low caste (essentially a disadvantaged community), they delivered lower value to their consumers compared to microentrepreneurs who are not. A potential explanation for this effect is that microentrepreneurs who are from a low caste may have less access to resources and networks. However, we do not find an effect if entrepreneurs belong to the same caste as their consumers.

## Robustness checks

We performed multiple robustness checks. First, the ‘value delivered to consumers’ variable is measured as the amount that a microentrepreneur can generate for their men and women consumers by enrolling them in government programs every month. Value delivered to consumers include monetary benefits of the program as well as savings from consumers not having to lose their daily wage from taking a day off to travel and submit documents to the government office. Including both monetary and time-saving benefits offers a more complete measure, considering the substantial impact of time savings for consumers. To check the robustness of our results, we separated the “monetary benefits” and the “benefits derived from the time saved” and tested the models independently. Tables 10 and 11 illustrate that the results remain consistent for both components of the value delivered to consumers variable. Time saved comprises of a small monetary amount (thousands INR) compared to

**Table 10** Results at the microentrepreneur-level, with value delivered to consumers excluding the benefits derived from time saved as the dependent variable

	(1)	(2)
	Value delivered to consumers (excluding time saved)	Value delivered to women consumers (excluding time saved)
Treatment X Post	991073.9*** (379958.9)	453042.7** (205217.7)
Post	-151556.6 (692227.5)	-115498.2 (348963.7)
Treatment	1346741.3*** (375679.7)	775146.1*** (200955.5)
Microentrepreneur age	-79007.3*** (29030.8)	-45810.3*** (13256.7)
Consumer married	-3869425.5*** (1129103.8)	-1925956.2*** (577984.4)
Consumer employed	-1269536.4*** (399225.1)	-385800.6** (193236.3)
Consumer vulnerability	-954160.4 (760322.3)	-552200.3 (378857.1)
Consumer disabled	-1645458.2 (1515573.8)	-419143.9 (661054.5)
Consumer sickness	49257.9 (264119.7)	9031.9 (126215.4)
Location FE	YES	YES
Year FE	YES	YES
Month FE	YES	YES
Constant	3797139.7*** (1350830.6)	2026126.3*** (640424.4)
N	1725	1403
Adj R Square	0.1007	0.1143

All tests are two tailed. Standard errors in parentheses

Notes: \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

money benefits from government programs (hundreds of thousands INR).

Second, we estimate the model using different time periods for the dependent variable to check for the sensitivity of our results to alternative time periods. We estimate the model using: (1) the current period social performance of the microentrepreneur and (2) the two-period social performance of the microentrepreneur for consumer acquisition and value delivered to consumers. Our results remain consistent. The results from these analyses appear in Tables 12 and 13.

Next, the first six months after the intervention can be considered a learning and adjustment period for the newly recruited women microentrepreneurs. For example, the new microentrepreneurs do not have government identity cards that are required for applying for various welfare programs. Hence, there is a temporary revenue-sharing arrangement (70/30 new/existing microentrepreneur split) with another microentrepreneur in the nearest location. During these

**Table 11** Results at the microentrepreneur-level, with value delivery from time saved as the dependent variable

	(1)	(2)
	Value delivery from time saved	Value delivery to women from time saved
Treatment X Post	1130.9** (569.6)	771.2** (332.1)
Post	508.0 (555.2)	222.1 (350.0)
Treatment	1903.2*** (590.5)	147.0 (347.2)
Microentrepreneur age	-20.97 (20.73)	1.644 (12.16)
Consumer married	-605.4 (540.4)	563.0 (384.1)
Consumer employed	-382.6 (504.4)	-374.8 (287.0)
Consumer vulnerability	-768.1 (906.0)	-1631.7*** (528.3)
Consumer disabled	4508.5 (3010.9)	4840.5** (2307.7)
Consumer sickness	-351.1 (341.1)	-652.5*** (201.8)
Location FE	YES	YES
Year FE	YES	YES
Month FE	YES	YES
Constant	2957.2*** (964.2)	1444.3** (603.4)
N	1202	861
Adj R Square	0.1646	0.1692

All tests are two tailed. Standard errors in parentheses

Notes: \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

months, while the new microentrepreneurs acquired consumers, the other microentrepreneurs would submit the physical applications. To test the impact of trained and equipped women microentrepreneurs, a more accurate comparison group, we take a subsample that excludes the first six months after the intervention. The results of the subsample analysis remain consistent as shown in Table 14.

## Discussion

Empowering women through entrepreneurial activities can play a crucial role in driving positive social change. Our findings reveal the positive social impact of rural women microentrepreneurs on their consumers. This finding aligns with previous marketing research highlighting the communal attributes often associated with women, including care, compassion, and empathy (Santana & Morwitz, 2021; Varma et al., 2023). Moreover, women microentrepreneurs exhibit a strong orientation towards social service

**Table 12** Robustness check of results at the microentrepreneur-level with current period performance

	(1)	(2)	(3)
	Consumer acquisition	Value delivered to consumers	Value delivered to women consumers
Treatment X Post	9.879*** (2.873)	1073190.3*** (316556.7)	427052.1** (167183.0)
Post	14.97*** (3.104)	-630647.8 (542919.5)	-258637.6 (270922.6)
Treatment	1.094 (2.927)	784177.5*** (264077.8)	415048.8*** (145627.3)
Microentrepreneur age	0.0624 (0.146)	-60250.8* (24017.5)	-32695.6*** (11150.6)
Consumer married	-5.625** (2.304)	-2531244.3*** (719217.0)	-1309967.8*** (379504.8)
Consumer employed	-4.023 (2.864)	-1142256.2*** (332775.4)	-374392.5** (160752.8)
Consumer vulnerability	-7.511 (5.251)	-1343930.3*** (404953.6)	-705493.1*** (256259.1)
Consumer disabled	-8.088 (8.104)	-2021945.9*** (586213.9)	-1091583.4*** (306881.3)
Consumer sickness	-0.0862 (2.798)	-87647.8 (224095.6)	-82783.7 (105035.0)
Location FE	YES	YES	YES
Year FE	YES	YES	YES
Month FE	YES	YES	YES
Constant	12.35** (6.006)	1818433.2** (873839.8)	1113540.4*** (418161.4)
N	3609	2647	2295
Adj R Square	0.14	0.0577	0.0567

All tests are two tailed. Standard errors in parentheses

Notes: \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

and proactively engage in activities that address the specific needs of women consumers. This finding extends existing marketing research that demonstrates that female mentors improve the performance of female microentrepreneurs (Germann et al., 2023).

Moreover, the study demonstrates an interesting ripple effect, wherein the positive social impact of women microentrepreneurs extends beyond their immediate sphere of influence to positively influence men microentrepreneurs. In the presence of significant women microentrepreneurs, men microentrepreneurs show a greater propensity to focus on social service, particularly towards women consumers. This suggests a form of social learning or emulation (Lam et al., 2010), whereby men adapt their behavior based on the

**Table 13** Robustness check of results at the microentrepreneur-level with two-period performance

	(1)	(2)	(3)
	Consumer acquisition	Value delivered to consumers	Value delivered to women consumers
Treatment X Post	7.368*** (2.750)	982066.0*** (353836.4)	408958.6** (188665.0)
Post	18.28*** (2.972)	-313589.9 (610411.0)	-121878.4 (312814.6)
Treatment	5.033* (2.881)	1153521.2*** (322731.4)	648817.1*** (173764.1)
Microentrepreneur age	0.075 (0.135)	-71102.7*** (26353.9)	-39981.2*** (11992.3)
Consumer married	-4.836* (2.533)	-3359571.1*** (989680.2)	-1605435.3*** (514393.4)
Consumer employed	-2.011 (2.638)	-1145456.8*** (345935.3)	-342220.9** (168093.1)
Consumer vulnerability	-10.40** (5.075)	-867090.7 (630146.9)	-502841.1 (332602.4)
Consumer disabled	-6.328 (6.724)	-1,673,940 (1061144.0)	-831,169 (641285.7)
Consumer sickness	0.551 (2.579)	46646.6 (250290.1)	-8290.5 (118807.9)
Location FE	YES	YES	YES
Year FE	YES	YES	YES
Month FE	YES	YES	YES
Constant	9.958* (5.853)	2819986.3*** (1086568.0)	1498727.3*** (522036.0)
N	2967	2055	1716
Adj R Square	0.197	0.0755	0.0796

All tests are two tailed. Standard errors in parentheses

Notes: \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

observed success and effectiveness of women microentrepreneurs in addressing social needs.

The reciprocal relationship between women and men microentrepreneurs in driving social impact highlights the importance of gender dynamics in shaping entrepreneurial outcomes. It underscores the potential for collaborative efforts between men and women entrepreneurs to achieve broader social goals and address gender disparities within entrepreneurial ecosystems. Furthermore, it emphasizes the need for inclusive approaches to entrepreneurship that recognize and leverage the unique strengths and perspectives of both genders.

Overall, these findings contribute to our understanding of the social dimensions of marketing and entrepreneurship and underscore the importance of gender-inclusive policies

**Table 14** Robustness check of results at the microentrepreneur-level with subsample data (minus learning period) and three-period performance

	(1)	(2)	(3)
	Consumer acquisition	Value delivered to consumers	Value delivered to women consumers
Treatment X Post	7.101** (2.854)	1410754.3*** (516051.3)	588207.4** (275587.4)
Post	12.23*** (4.047)	-346560.5 (1053781.0)	-370652.1 (587878.3)
Treatment	3.829 (2.993)	1584888.3*** (470223.0)	977007.4*** (258804.3)
Microentrepreneur age	-0.00201 (0.142)	-119521.1*** (41586.7)	-66625.4*** (19163.2)
Consumer married	-3.196 (2.540)	-4825303.5*** (1501083.0)	-2367265.6*** (739664.2)
Consumer employed	0.127 (2.700)	-1257266.3*** (479804.3)	-308541.6 (218154.3)
Consumer vulnerability	-7.428 (4.835)	-1500720.1 (1097169.0)	-1241338.8** (531712.4)
Consumer disabled	-6.417 (10.737)	-2879275.4 (2272403.0)	-1184368.3 (1049687.0)
Consumer sickness	-3.699* (2.126)	-23046.7 (290759.2)	4508.6 (147783.7)
Location FE	YES	YES	YES
Year FE	YES	YES	YES
Month FE	YES	YES	YES
Constant	18.70*** (6.307)	5474171.7*** (1829189.0)	2683981.5*** (847994.3)
N	1729	1178	967
Adj R Square	0.166	0.0825	0.0978

All tests are two tailed. Standard errors in parentheses

Notes: \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$

and initiatives aimed at fostering social impact and sustainable development. By empowering women microentrepreneurs and promoting gender equality within entrepreneurial ecosystems, societies can harness the full potential of entrepreneurship to address pressing social challenges and promote inclusive economic growth.

### Contributions to theory

Through this study, we contribute to the growing literature on the intersection of marketing, social entrepreneurship, and gender dynamics (Germann et al., 2023; Hassan et al., 2023; Varma et al., 2023). Although the gender literature has been advancing towards breaking gender stereotypes

(Castellaneta et al., 2020; Lee & Huang, 2018), our research highlights the importance of them in the rural areas of emerging markets, where women may not be formally recognized or perceived valuable (Bhatt et al., 2019; Datta & Gailey, 2012; Viswanathan et al., 2010). Our findings reinforce social role theory in marketing (e.g., Babin & Boles, 1998; Meyers-levy and Loken, 2015; Peñaloza et al., 2023; Schul & Wren, 1992) by showing that rural women microentrepreneurs tend to bring communal attributes to their business practices, which translates into increased value delivery for consumers. This contributes to the literature by demonstrating how culturally prescribed roles can influence marketing outcomes in microentrepreneurship.

Our study also reinforced the concept of shared identity (Dennehy & Dasgupta, 2017), illustrating how women microentrepreneurs can uniquely deliver value for women consumers in the context of marketing. Shared identity between women microentrepreneurs and women consumers is rooted in common experiences and understanding from having navigated similar challenges and societal expectations. Women microentrepreneurs are better positioned to empathize with and understand the societal constraints, limited access to resources, and gender-specific needs and obstacles faced by other women consumers in rural settings. Women entrepreneurs can tailor their services and interactions in a way that resonates more profoundly with their women consumers, leading to a more effective and meaningful exchange, enhancement of trust and rapport, and more relational exchanges between the service provider and consumer (Singh & Sirdeshmukh, 2000).

Also, our study highlights how the presence of women microentrepreneurs serves as a catalyst for significant change in the performance, attitudes, and approaches of men microentrepreneurs. Observing their female counterparts, men microentrepreneurs adopt more consumer-centric approaches, prioritizing understanding, and empathy in their interactions with consumers (Varma et al., 2023). The inclusion of women in the entrepreneurial space can introduce new competitive dynamics, leading to overall improvements in marketing performance in terms consumer acquisition and value delivered to consumers. Women microentrepreneurs bring different perspectives and strategies, and men microentrepreneurs have the opportunity to learn from them. This learning can go beyond simple adoption of techniques to include a deeper understanding of the value of diverse approaches and perspectives in business. Collaboration between male and female entrepreneurs can foster a richer, more innovative, and more effective service delivery environment, benefiting consumers and the enterprise alike.

## Contributions to practice

Our study has important implications for social enterprises, marketing practitioners focusing on rural consumers, and policymakers. By showing the impact of an intervention in recruiting a group of women microentrepreneurs on consumer acquisition and value delivered to consumers in a social enterprise setting, we highlight the importance of women's involvement in social enterprises, particularly those situated in rural India, which encompasses a population of 800 million (Narayan & Kankanhalli, 2021). This may facilitate important actions to be undertaken by social enterprises, practitioners, and policymakers.

Initially, DEF aimed to diversify its workforce by integrating rural women microentrepreneurs, who may be less educated and less familiar with how to run a business, in hopes of balancing gender representation. Our findings suggest that there is a significant rise in overall consumer acquisition and value delivered to consumers following the increased involvement of women. This revelation suggests that social organizations may find impact extended far beyond when lowering the barriers to entrepreneurship and including women (Castellaneta et al., 2020). Social enterprises facing similar challenges should aim to recruit women to appreciate the broader value they bring to the organization. Moreover, by better understanding the specific needs of women consumers, women microentrepreneurs deliver higher value for their women consumers.

Our research reveals that the presence of women microentrepreneurs positively impacted the performance of the male microentrepreneurs. This suggests that a mixed-gender workforce might be optimal. While focusing on women microentrepreneurs has its advantages, the dynamic interplay between genders can lead to a more comprehensive social impact, challenging embedded social norms and fostering community cohesion. Therefore, social enterprises should approach community engagement and gender sensitivity with a balanced perspective. Rather than shifting entirely to one gender, maintaining a gender-diverse workforce could leverage the strengths of both men and women, leading to higher consumer acquisition and value delivery.

Global consumer goods companies such as Unilever have started initiatives like Project Shakti to empower women microentrepreneurs in India, which is now extending its reach to women in the Middle Americas. Leveraging our findings, global consumer goods companies can deliver more value in rural areas of emerging markets such as India, the Middle Americas, and Africa by recruiting rural women microentrepreneurs.

## Limitations and future research

Our study has several limitations that open the door for future research. First, unlike in a laboratory or field experiment, in our context the intervention already happened, classifying our study as a quasi-experiment (Leatherdale, 2019). This design comes with inherent limitations regarding causality and control over variables. Future research may focus on using field experiments to test specific gender difference-related manipulations in social enterprises. Second, our focus is primarily on social enterprises within an emerging market context, specifically rural India, raising questions about the generalizability of our findings. Though the observed benefits of integrating rural women microentrepreneurs are specific to this context, future research can look at different settings, including prosperous rural areas, urban areas, and developed markets, to evaluate the impacts of women's involvement in social enterprises.

Third, we did not study the potential effects of caste or religion on social enterprise performance. In rural India, these factors can significantly influence social dynamics and marketing outcomes. Future research could investigate how caste and religious backgrounds interact with gender roles within social enterprises to offer deeper insights into the multifaceted nature of social entrepreneurship.

Lastly, although microentrepreneurs were monitored with the mobile app, frequent site visits, and an online network, individual monitoring may influence consumer acquisition and value delivered to consumers. Future studies might explore the role of formal monitoring or training programs.

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**Data availability** Data are available on request.

## Declarations

**Ethical approval** Not applicable since the data were supplied by the Digital Empowerment Foundation (DEF).

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