



THE DIMENSIONS OF SOCIAL INNOVATION AND THE ROLES OF SOCIAL ACTORS WITHIN THE CONTEXT OF MICROCREDIT

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Abstract

Objective: The purpose of this paper is to assess the social innovation arising from the granting of microcredit, as well as the roles played by its social actors.

Methodology: An experience survey was carried out with beneficiaries of the Crediamigo microcredit program/BNB, in Fortaleza, Ceará. In the study, we investigate four dimensions of social innovation: (i) typology; (ii) depth; (iii) coverage; and (iv) social actors.

Originality and Relevance: The study explores the link between microcredit and social innovation, with evidence from an understudied empirical context.

Main Results: The results indicate that the typology is characterized by the implementation of new marketing methods to offer products and services, enabling consumption by people in situations of economic vulnerability. In terms of depth of innovation, the findings show incremental, disruptive, and institutional actions that promote social and economic inclusion with local coverage. As for social actors, we identified three profiles of beneficiaries oriented towards social innovation: “innovators”, “visionaries”, and “conservatives”.

Theoretical/methodological contributions: The study expands the understanding of social innovation regarding the reach/impact of microcredit in local and social development. Moreover, we propose three different profiles of social innovation actors, which can serve as a reference for future research.

Social/management contributions: The study showed that the social innovation actions carried out by the beneficiaries promote socioeconomic inclusion, allowing the generation of additional jobs, empowerment, and improvement in the quality of life, transcending financial aspects.

Keywords: social innovation, social actors, microcredit, social impact.

As dimensões da inovação social e os papéis dos atores sociais no contexto do microcrédito

Resumo

Objetivo: O objetivo deste artigo é avaliar a inovação social decorrente da concessão de microcrédito, bem como os papéis desempenhados pelos seus atores sociais.

Metodologia: Foi realizada uma *survey* de experiência com beneficiários do programa de microcrédito Crediamigo/BNB, em Fortaleza, Ceará. No estudo, investigamos quatro dimensões da inovação social: (i) tipologia; (ii) profundidade; (iii) cobertura; e (iv) atores sociais.

Originalidade e Relevância: O estudo explora a ligação entre o microcrédito e a inovação social, com evidências provenientes de um contexto empírico pouco estudado.

Principais Resultados: Os resultados indicam que a tipologia se caracteriza pela implementação de novos métodos de marketing para a oferta de produtos e serviços, possibilitando o consumo por pessoas em situação de vulnerabilidade econômica. Em termos de profundidade da inovação, os resultados mostram ações incrementais, disruptivas e institucionais que promovem a inclusão social e econômica com cobertura local. Quanto aos atores sociais, identificamos três perfis de beneficiários orientados para a inovação social: “inovadores”, “visionários” e “conservadores”.

Contribuições teóricas/metodológicas: O estudo amplia a compreensão da inovação social no que diz respeito ao alcance/impacto do microcrédito no desenvolvimento local e social. Além disso, propomos três perfis diferentes de atores de inovação social, que podem servir de referência para pesquisas futuras.

Contribuições sociais/gerenciais: O estudo mostrou que as ações de inovação social realizadas pelos beneficiários promovem a inclusão socioeconômica, permitindo a geração de empregos adicionais, o empoderamento e a melhoria da qualidade de vida, transcendendo os aspectos financeiros.

Palavras-chave: inovação social, atores sociais, microcrédito, impacto social.

Las dimensiones de la innovación social y los rol de los actores sociales en el contexto del microcrédito

Resumen

Objetivo: El objetivo de este artículo es evaluar la innovación social resultante del otorgamiento de microcréditos, así como los roles que desempeñan sus actores sociales.

Metodología: Se realizó una encuesta de experiencia a beneficiarios del programa de microcrédito Crediamigo/BNB, en Fortaleza, Ceará. En el estudio, investigamos cuatro dimensiones de la innovación social: (i) tipología; (ii) profundidad; (iii) cobertura; y (iv) actores sociales.

Originalidad/Relevancia: El estudio explora el vínculo entre el microcrédito y la innovación social, con evidencia de un contexto empírico poco estudiado.

Principales Resultados: Los resultados indican que la tipología se caracteriza por la implementación de nuevos métodos de comercialización para ofrecer productos y servicios, posibilitando el consumo por parte de personas en situación de vulnerabilidad económica. En términos de profundidad de la innovación, los resultados muestran acciones incrementales, disruptivas e institucionales que promueven la inclusión social y económica con cobertura local. En cuanto a los actores sociales, identificamos tres perfiles de beneficiarios orientados a la innovación social: “innovadores”, “visionarios” y “conservadores”.

Contribuciones teóricas/metodológicas: El estudio amplía la comprensión de la innovación social con respecto al alcance/impacto del microcrédito en el desarrollo local y social. Además, proponemos tres perfiles diferentes de actores de la innovación social, que pueden servir como referencia para futuras investigaciones.

Contribuciones sociales/empresariales: El estudio demostró que las acciones de innovación social realizadas por los beneficiarios promueven la inclusión socioeconómica, permitiendo la generación de empleos adicionales, empoderamiento y mejora de la calidad de vida, trascendiendo los aspectos financieros.

Palabras clave: innovación social, actores sociales, microcrédito, impacto social.

1 Introduction

Due to an outbreak of social conflicts, our lack of understanding of social change has become evident, which has created more and more latent scientific interest in social changes and technical and social innovations in their respective socioeconomic contexts (Foroudi et al., 2020; Howaldt et al., 2015).

The demand for more sustainable options in solving social problems through the adoption of practices which foster changes in institutions and agents, seeking to improve quality of life and the social inclusion of excluded groups, is considered Social Innovation [SI] (Agostini et al., 2020; Avelino et al., 2017; Bignetti, 2011; Moulaert et al., 2005). One of the perspectives that should not be lost on the choice of social innovation terminology is its theoretical framework for studying the phenomenon of innovation, which helps us theorize about the process of social innovation.

Thus, the subject of SI is relevant in vulnerable environments, because its objective is to improve the lives of people and communities (Foroudi et al., 2020) by promoting cooperation among citizens, democratic decision making, social justice, social cohesion, group identify, and citizen empowerment (Agostini et al., 2020; Ziegler et al., 2017; Mahmuda et al., 2014).

Various examples of social innovation have been identified in the literature, such as: microcredit, the fair trade movement, and cultural activities, among others (Mulgan, 2006; Van der Have & Rubalcaba, 2016; Edwards-Schachter & Wallace, 2017). Microcredit has emerged as an innovative tool to combat poverty in underdeveloped countries (Mustafa et al., 2018), constituting a low-cost instrument for microentrepreneurs, due to the difficulty in accessing resources in the traditional banking system (Ribeiro et al., 2022). Microfinance as a mode of finance may promote social value creation, and it is recognized worldwide as an investment innovation that also leverages economic and social values (Molnár, 2017; Mahmuda et al., 2014), especially when we have microcredits based on networks of collective trust that allow people in situations of extreme economic and institutional vulnerability to access credit for microbusinesses.

Although SI is an already established concept, with its conceptual origins in the Global North, the nuance of innovation in the process and at the end gains its own intense perspective in the Global South, which is not always understood by authors from the Global North. Social demands in situations of extreme vulnerability are a fertile field for “incremental” social innovations (Schäfer et al., 2021).

SI studies lack sustained and systematic analyses that verify its impacts (Tepsie, 2014; Howaldt et al., 2016; Ziegler et al., 2017; D’Amario & Comini, 2020), in a multidimensional social approach (Tepsie, 2014; Howaldt et al., 2015; Ashta et al., 2014; Molnár, 2017; Foroudi et al., 2020). Back to theoretical discussions on SI, there are a lack of research on the systemic catenation of (transformative) social innovation, *id est*, could a social innovation (*e.g.*, policy funding social

innovations) create practices and services that might change attitudes and values in the vulnerable groups? And how could we have found them? How could we characterize them?

Microfinance is a rich field of study for understanding the process of social innovation, as the microcredit system aims to overcome some social challenges based on trust networks, and can present up to three possible innovative results: (i) restructuring of the traditional system of bank loans; (ii) formation of trust networks to attract resources (*i.e.*, solidarity groups); and (iii) the learning process of cooperation and the creation of well-being among its beneficiaries (Yunus, 2003).

Thus, in order to provide more understanding about the influx of SI created by microcredit beneficiaries, the objective of this study is to evaluate the social innovation that arises through the concession of microcredit in terms of its type, depth, and scope, as well as the roles played by its social actors, due to understanding how a social innovation can generate an environment for other social innovations.

The selection of this approach, which captures the essential SI characteristics promoted by its operators as members of civil society, facilitates the development of SI given the need to understand its modes of articulation and the involvement of its agents in the development of new solutions to social challenges (Correia et al., 2016). In addition, it is understood that the actions of SIs which are incremented by microcredit beneficiaries can contribute to the social and economic transformation of people and their communities (Schönerwald & Vernengo, 2016).

Here we propose to analyze SI through a lens subdivided “into dimensions” that can help understand the extent of the transformation, as well as its more economic or social bias. That is, whether the social innovation of microcredit generates only economic capital/transformation, or whether it also generates social capital/transformation (*i.e.*, micro/incremental social innovations).

Despite previous studies with proposals to “analytically decompose” the dimensions of the SI phenomenon (Cloutier, 2003; Tardif & Harrisson, 2005; Mulgan, 2006; Cajaiba-Santana, 2014; Howaldt et al., 2014; Silva & Bitencourt, 2019), we chose, in this study, to decompose SI according to the authors D’Amario and Comini (2020), who have been studying the context in the Global South, proposing the analysis of the dimensions of SI according to the theoretical principles of innovation studies, as rescued by Edwards-Schachter and Wallace (2017).

Within this context, the researchers D’Amario and Comini (2020) have developed a classification scale for SI which makes it possible to identify three dimensions - type (products,

marketing, or organizational), depth (disruptive, institutional, or incremental) and scope (local, regional, national, or global) – as instruments of analysis for the SI phenomenon.

We have opted to use D’Amario and Comini’s classification scale (2020) in order to examine the type, depth, and scope dimensions of SI through beneficiaries of the Crediamigo Program offered by the Northeastern Bank of Brazil [Banco do Nordeste do Brasil - BNB] due to the breadth of the analysis adopted by social entrepreneurs. This program was inspired on the Yunus’ Grameen Bank idea.

This is an opportune sample, because the main target public of the beneficiaries of the Crediamigo Program live in a reality characterized by exclusion and vulnerability. Moreover, among the institutions committed to the cause of regional development, BNB stands out as the operating agent of this program which is the largest urban microcredit program in South America (BNB, 2023).

The foundation of this investigation is the need for useful evidence about the social influx of microcredit through the development of the capacities of its beneficiaries (Molnár, 2017; Mahmuda et al., 2014). In fact, this study’s contribution will be to stimulate social entrepreneurs or new micro-entrepreneurs to make the best allocation of their resources to obtain the best social and economic results for their enterprises (Foroudi et al., 2020; Howaldt et al., 2015; Howaldt et al., 2016). Thus, this study will be empirically based on gaps in the literature about the systemic results of create new values and attitudes beyond the economic result of the microfinance social innovation.

2 Theoretical Background

In the heart of the innovation paradigm of industrial society there are technical innovations related to products and processes which “[...] are considered (almost) the only hope for social development” (Gillwald, 2000, p. 42). With the appearance of the SI conceptualization, however, the perspective of innovation processes and their integration in structures and results has changed as has the object of innovation. The studies of van der Have and Rubalcaba (2016) and Edwards-Schater and Wallace (2017) brought the wide range of conceptual discussion consolidating the SI concept.

2.1 Social Innovation and the Societal Change

The studies on SI was taken as a field in construction (Franz et al., 2012; Mulgan, 2006), and it has been misunderstood as a “buzz word” (Pol & Ville 2009). The initial reductive use of SI, after the 1990’s, focus on the idea of social as an antagonism of economic (or market oriented), so it qualifies actions oriented to demands that are not well supported by a market value.

This discussion gives the opportunity to the researchers in the fields of Social Change and Sociology of the Technology (Franz et al., 2012; Howaldt et al., 2015; Howaldt & Jacobsen, 2010; Howaldt & Kopp, 2012, Howaldt et al., 2015) to bring a wide conceptualization of the term social in SI: social means both about societal level (*i.e.*, changes and transformation in it) and also about social relations and organization. Complementing this affirmation, Cajaiba-Santana (2012) emphasizes that results of SI might be multiple, to be revealed as new institutions, new social movements, new social practices, or different collaborative work structures.

Mulgan (2006, p. 146) proposed that “social innovation refers to innovative activities and services that are motivated by the goal of meeting a social need and that are predominantly diffused through organizations whose primary purposes are social”. In the practitioners’ side, OECD (2010) listed in 2010 a diverse list of SI definitions and pointed the first “institutional” concept for SI.

For practitioners in Europe, the Bureau of European Policy Advisers (BEPA) argues that the SI concept must be more specific: “Specifically, we define social innovations as new ideas (products, services and models) that simultaneously meet social needs (more effectively than alternatives) and create new social relationships or collaborations. They are innovations that are not only good for society but also enhance society’s capacity to act” (BEPA, 2011).

So we could achieve a sounder concept of SI: “new, more effective and/or more efficient social practices with social ends and social means” (Franz et al., 2012). One central preposition in the SI theoretical underpinning is that this phenomenon is, at same time, a practice, a change, and is systemic and dynamic. The BEPA's proposal of “social approaches” (BEPA, 2011, 2014; Hubert, 2012) helps to find a clearer understanding of the term social and its approaches are understood by Hochgerner (2012) as social “scopes”.

According to Hubert (2012), in the BEPA report, there are three complementary approaches (scopes) to social innovation: (i) Social - the grassroots social innovations, which respond to pressing social demands which are not addressed by the market and are directed towards vulnerable groups in Society; (ii) Societal - the broader level, which addresses societal challenges in which

the boundaries between social and economic are blurred and which are directed towards society as a Whole; and (iii) Systemic - the systemic type which relates to fundamental changes in attitudes and values, strategies and policies, organisational structures and processes, delivery systems and services.

In effect, following in Howaldt et al. (2017), we can verify the understanding of SI as a new paradigm of innovation characterized by three elements: (i) content (recognition focused on non-technological innovations in social practices), (ii) process (which is open to society) and (iii) objectives (oriented by the main challenges to society).

Due to the dramatic expansion in new social demands – reinforced by globalization, population growth, social conflicts, wars, and climate change – there is a need for social measures and policies to control them (Howaldt et al., 2017). Luckily, new ideas (products, services, and models) have been developed and implemented to meet these social needs, with an emphasis on the term SI (Howaldt et al., 2017; Ziegler et al., 2017).

SI appears as a positive result that occurs after moments of crisis, when agents are pushed into action and resolution due to a given problematic situation (Agostini et al., 2020; Avelino et al., 2019; Correia et al., 2016). These specialists add the creation of new solutions as options in the initial phase of implementation, however in the long term, they tend to be institutionalized, making room for renewed models of work, development, and governance. Therefore, independent of the type of SI, Tardif and Harrisson (2005) mention that these innovations have local or localized characteristics.

The challenge to be studied in the Social Sciences is to understand the diffusion of SI, as well as its main agents and conductors, identifying its established social changes and social influences (D’Amaro & Comini, 2020; Van der Have & Rubalcaba, 2016) as well as the theoretical-empirical advances of a new broad innovation paradigm (Torlig et al., 2020; Ziegler et al., 2017; Franzoni & Silva, 2016).

2.2 The Dimensional Analytical Perspective

It is in this environment that Tardif and Harrisson (2005) study the dimensions of SI to verify its conception which is supported by the environment that has motivated its development, along with its implementation and the agents/actors involved. The effects of these actions are

evaluated, including the search for improvements in the practices adopted in the accomplishment of their objectives (Agostini et al., 2020; Avelino et al., 2017; Ziegler et al., 2017).

In this way, the actors linked to the concept of SI are categorized as organizational, institutional, intermediary, or social (Tardif & Harrisson, 2005). Correia et al. (2016) point out that social actors are people/members of civil society, cooperatives and associations, and unions or community associations which stimulate the discovery of solutions to meet social needs through the articulation of agents who have the ability to accomplish social results.

This study, in effect, awakens an interest in identifying the dimensions of and the roles played by social actors in SI initiatives, which constitute a challenge in terms of meeting social demands and contributing effectively to improvements. A context to be explored regarding the role of social actors is the microfinance environment, which can be understood as a financial mechanism that can result in the promotion of social innovation initiatives (Yunus, 2003).

The result of microcredit is not restricted only to its financial effects (*e.g.*, employment and income), but also to its social impacts in a multidimensional way (*e.g.*, management practices, customer targeting, public policies, and social innovations) (Khavul et al., 2013; Ribeiro et al., 2022). Currently, there is a new perspective on the performance of microfinance, in particular, on its beneficiaries (Akhter et al., 2020), highlighting their capabilities in managing their businesses in a sustainable and innovative way.

Credit supply is a key element for overcoming social inequalities through innovative attitudes (Yunus, 2003; Andrikopoulos & Triantafillou, 2021; Ribeiro et al., 2022). To this end, microcredit may be an innovation in the economic and social domain that transcends financial aspects, constituting a means for the multidimensional objective of social inclusion of its beneficiaries (Bellandi et al., 2021).

However, a systematic review of the literature of quantitative studies designed to provide a greater understanding of SI generated by micro-entrepreneurs who benefit from microcredit programs has not identified any studies that verify the types, depth, and scope of SIs developed within this context, which therefore constitutes a gap in the literature (Foroudi et al., 2020).

It should be added that most studies of scales to evaluate SI or social entrepreneurship approach this topic by evaluating the creation of value in social enterprises (D'Amario & Comini, 2020; Christlieb, 2012) which are mostly third sector institutions, but may also include public

policies instituted by the government and social responsibility measures adopted by private companies (Quirino et al., 2015; Correia et al., 2016; Comini et al., 2022).

Within this context, D'Amario and Comini (2020) have developed and validated a classification scale of SIs generated by social organizations in the Global South context, which is composed of 23 items which classify and identify SI and are characterized by type, depth, and scope. We have chosen a study of the mentioned authors to effect our investigation due to the absence of qualitative analysis models with the objective of identifying SIs utilized by microcredit beneficiaries.

SI, as an incipient and spontaneous phenomenon in the social environment or in the practices of certain agents/actors which stimulate the interest of researchers in terms of how they emerge from innovation initiatives, experiences and processes that occur in situations characterized by the structural problems of social exclusion and inequality (Comini et al., 2022; Agostini et al., 2020; Ziegler et al., 2017; Moulaert et al., 2013).

In line with this, the previously mentioned SI classification scale created by D'Amario and Comini (2020) makes it possible to identify three dimensions that are aligned with other social innovation studies: type (Hochgenner, 2012; Djellal Gallouj, 2012; OECD, 2005); depth (Garcia & Calantone, 2002); and scope /coverage (OECD, 2005). The dimensions of SI are listed and detailed in Table 1.

Table 1

D’Amario and Comini’s Conceptual SI Classification Model (2020)

Dimension	Object of Analysis	Analysis Subcategory
Type	This dimension encompasses three subcategories (product, marketing, and organizational), with the purpose of understanding how microenterprise business models generate socio-environmental innovation, observing product, marketing, and organizational solutions that have the potential to generate socio-environmental value for a community.	Product
		Marketing
		Organizational
Depth	This dimension includes three subcategories (disruptive, incremental, and institutional), aiming to understand IS that promote qualitative changes that deconstruct common practices and knowledge in a specific area subdivided into incremental, disruptive and institutional IS.	Disruptive
		Incremental
		Institutional
Scope	This dimension covers four subcategories (local, regional, national, and global) of analysis verifying the diffusion of SI in local, regional, national and global organizations.	Local
		Regional
		Nacional
		Global

Note. Source: Adapted from D’Amario and Comini (2020).

D’Amario and Comini (2020) consider the source of the classification for types of SI to be the traditional description offered by the Oslo Manual’s previous editions (OECD, 2005), adapting it for social objectives subdivided into three constructs: (i) product (introduction of a new good or service or significantly improving it in terms of its characteristics or uses); (ii) marketing (implementation of a marketing method with significant changes in the design of the product or its packaging, in its product placement, promotion or pricing to meet social goals); and (iii) organizational (implementing a new organizational method in the company’s business practices, in the organization of the workplace, or external relations to meet social goals).

In addition to types, SI is also classified according to its depth, which occurs on various levels based on the focus of knowledge. D’Amario and Comini (2020) base it mainly on the study by Nicholls and Murdock (2012), among other correlated studies, which considers three analysis constructs: (i) disruptive (which alters cognitive structures which are references as well social structures – policy focus), (ii) incremental (dealing with market failures identifying them in a more

efficient manner – product focus) and (iii) institutional (reconfigures market structures and standards – market focus).

D’Amario and Comini (2020) decided to use the taxonomy of scope for occurrences of SI in line with Comini (2016), which consists of observing SIs from four perspectives: (i) local (addressing social and/or environmental problems of a given community or city); (ii) regional (addressing the needs of a region or several regions: North, South, etc.); (iii) national (found throughout the country); and (iv) global (addressing the needs of various countries).

Moreover, D’Amario and Comini’s three dimensions (2020) favor the classification of SI with the support of an analysis of the environment which has motivated its development, types, and its interaction with social and market structures and their respective scopes. They evaluate the impacts of these actions, including efforts to improve adopted practices in achieving its objectives.

Our proposition and theorization is that: By analyzing the beneficiaries' perspective in relation to different dimensions of social innovation, we can verify whether this innovation is transformative or not, that is, whether it generates a change in the users' perspective, causing them to start acting more collectively. In our research, we propose to analyse the social innovations through a dimensional analytical framework, using a framework recently proposed to analyse SI in the Brazilian context.

3 Methodology

This study is a mixture of qualitative and quantitative in nature and is characterized as descriptive and exploratory. It consists of field research through the application of an experience survey (Gil & Reis Neto, 2021, Stebbins, 2001; Lavrakas et al., 2019) and interviews with the beneficiaries of the urban microcredit program of the BNB – Crediamigo.

BNB, an institution that offers multiple types of finance, runs the largest urban microcredit program in South America – Crediamigo to promote sustainable development in its area of operations (the Northeast and the North of the States of Minas Gerais and Espírito Santo), and this contributes decisively to a reduction of the region’s socioeconomic inequalities in comparison with the rest of the country, overcoming poverty and supporting productive activities that generate income (BNB, 2023).

The indicator data was gathered in August 2021 using the technique of direct observation (Cooper & Schindler, 2011), the application of an experience survey (Gil & Reis Neto, 2021), and

the conducting of interviews. We obtained a sample of 38 beneficiaries of the Crediamigo Program in Grande Bom Jardim area within the municipality of Fortaleza, Ceará. Participants were identified based on data from the Crediamigo Program.

In terms of the experience survey, it is frequently used in the field of Administration for professional and academic purposes, and it constitutes a new vision of exploratory studies (Gil & Reis Neto, 2021; Stebbins, 2001; Lavrakas et al., 2019). In effect, in this type of research, reality is presented according to the perspective of the participants, who are interviewed in order to ascertain their life experiences (Gil & Reis Neto, 2021).

The survey was administered in person and divided into two sections: a) the sociodemographic characteristics of the respondents; b) a six-point Likert Scale to evaluate the types, depths, and scopes of SI which ranged from 1 "totally disagree" to 6 "totally agree" (D’Amario & Comini, 2020). Table 2 displays the scale items used in the interviews.

Table 2

Variables Adopted in this Study

Dimension	Types
Subcategory	Product
ITprod1	Our products/services have innovative functional characteristics which meet the demands and/or profiles of consumers in situations of social vulnerability.
ITprod2	Our products/services have been altered in ways that do not alter their functions or intended uses, but will better meet the demands of consumers in situations of social vulnerability.
ITprod3	Our products/services present alterations in their characteristics which are perceived as valuable to consumers, principally those in situations of social vulnerability.
Subcategory	Marketing
ITmkt1	We utilize marketing to generate a new concept for the product and/or service in order to facilitate its use by people in situations of social vulnerability and/or reduce its environmental impact.
ITmkt2	We utilize a new method of promoting or pricing in order to make consumption possible for people in situations of social vulnerability and/or reduce its environmental impact.
ITmkt3	Our products/services have a new design which fits the profile of consumers in situations of social vulnerability and/or has a minimal environmental impact.

ITmkt4	We intend to increase our sales volume through changes in the positioning of our products/services in order to make them more accessible for consumers in situations of social vulnerability.
Subcategory	Organizational
ITorg1	Our organization achieves its social and/or environmental objectives by using new methods in partnership with other organizations to learn new ways of working.
ITorg2	We seek to acquire knowledge and interact with other organizations to achieve our social and/or environmental objectives.
ITorg3	Our organization employs new methods of interacting with other companies to share knowledge and achieve social and/or environmental objectives.
ITorg4	Our products/services are part of our new initiatives and partnerships which seek to reduce social and environmental problems.
Dimension	Depth
Subcategory	Incremental
IDincr1	We have improved our existing products/services and reduced their costs so that people in situations of social vulnerability will have access to them.
IDincr2	We have developed new products/services which are less expensive than existing products/services, and they also meet the needs of the socially vulnerable population.
IDincr3	We have improved our products and/or services to reduce their environmental impact and/or meet the needs of people in situations of social vulnerability.
Subcategory	Disruptive
IDdisr1	Our new products/services make the social and/or political participation of people in situations of social vulnerability possible.
IDdisr2	Our new products/services transform the lives of people in situations of vulnerability.
IDdisr3	Our new products/services are facing the challenge of creating equality, social justice, and empowerment.
IDdisr4	Our products/services offer new alternatives to individuals and organizations as a way to achieve social change in their communities.
IDdisr5	Our new products/services have changed the market's structure in meeting the needs of people in situations of social vulnerability.
Subcategory	Institutional
IDinst1	Our new products/service promote changes in social relationships, increasing the level of participation among socially vulnerable groups.
IDinst2	We have updated our products/services in ways that stimulate the inclusion of historically excluded groups.
Dinst3	Our new products/services are focused on the reconfiguration of existing social and economic structures with new technologies that are more oriented towards minorities who are in situations of social vulnerability.

IDinst4	Our new products/services rewrite markets and create new markets to meet the needs of people in situations of social vulnerability.
Dimension	Scope
ISscop1	Our products/services meet the needs of consumers on a local, regional, national, or global level.

Note. Source: Adapted from D’Amario and Comini (2020).

The subjects of this study are the beneficiaries of BNB’s Crediamigo Program in the Grande Bom Jardim are of the city of Fortaleza, Ceará. We have identified the following microcredit (product) options offered by the program: (a) cashflow (individual or group); (b) funds for training and cashflow (Crediamigo plus); and (c) fixed capital investments (fixed investments), such as: real estate, utensils, machines, physical renovations and construction – among other product and service offerings for microentrepreneurs.

In Table 3, we list information concerning the participant’s codes and profiles, corresponding to the groups defined above.

Table 3

Participant Codes and Profiles

Code	Gender	Age	Education	Product acquired in the Program
B1	F	35	High School Graduate	Individual Cashflow
B2	F	51	Partial High School	Individual Cashflow
B3	F	58	Partial High School	Individual Cashflow
B4	F	29	Partial High School	Individual Cashflow
B5	M	60	Partial Junior High School	Fixed Investment
B6	M	29	High School Graduate	Fixed Investment
B7	F	36	High School Graduate	Fixed Investment
B8	M	31	High School Graduate	Crediamigo Plus
B9	M	50	Junior High School Graduate	Individual Cashflow
B10	F	44	College Graduate	Individual Cashflow
B11	F	52	College Graduate	Individual Cashflow
B12	F	39	Partial Junior High School	Individual Cashflow
B13	F	43	High School Graduate	Individual Cashflow
B14	M	33	College Graduate	Individual Cashflow
B15	F	33	High School Graduate	Individual Cashflow
B16	M	43	Partial Junior High School	Individual Cashflow
B17	F	42	Junior High School Graduate	Individual Cashflow
B18	F	33	Partial Junior High School	Individual Cashflow
B19	M	49	High School Graduate	Individual Cashflow
B20	F	58	High School Graduate	Individual Cashflow
B21	F	48	Partial High School	Individual Cashflow
B22	F	43	High School Graduate	Individual Cashflow
B23	F	67	Partial Junior High School	Individual Cashflow
B24	F	37	Partial Junior High School	Individual Cashflow
B25	F	30	High School Graduate	Individual Cashflow
B26	M	52	Junior High School Graduate	Crediamigo Plus
B27	M	33	Partial College	Crediamigo Plus
B28	M	50	Partial High School	Crediamigo Plus
B29	F	35	High School Graduate	Crediamigo Plus
B30	F	64	Partial College	Fixed Investment
B31	F	48	College Graduate	Individual Cashflow
B32	F	63	Partial Junior High School	Individual Cashflow
B33	F	36	High School Graduate	Individual Cashflow
B34	F	53	Partial High School	Individual Cashflow
B35	F	34	Partial Junior High School	Individual Cashflow
B36	F	50	College Graduate	Individual Cashflow
B37	F	56	High School Graduate	Individual Cashflow
B38	F	51	Partial College	Individual Cashflow

Nota. Source: Prepared by the Authors (2022).

Looking at Table 3, we can perceive the predominance of females (73.7%), over 40 (60.0%), who are high school graduates (34.2%) with a preference for raising funds through the individual cashflow product (73.7%). The sample profile corroborates previous studies, in which

the target public for microcredit consists of women with little education who seek to raise funds for their merchandise cashflow or opening their own businesses (Salgado & Aires, 2018; Schönerwald & Vernengo, 2016).

Moreover, the effective segmentation of the data is in accordance with the three dimensions of the SI classification proposed by D’Amario and Comini (2020), considering the “guiding dimensions” (Type, Depth and Scope) which unfold in three or four analysis variables in accordance with the elements displayed in Table 4.

Table 4

Dimensions and Analysis Variables

Guiding dimensions	Analysis variables			
Type	Product	Marketing	Organizational	
Depth	Incremental	Disruptive	Institutional	
Scope	Local	Regional	National	Global

Note. Source: Adapted from D’Amario and Comini (2020).

The data was analyzed using Content and Documental Analysis techniques. Content analysis was carried out based on Bardin (2011). Thus, we characterized the participants in an exploratory manner, emphasizing aspects such as sex, age, education, acquired product, business revenues, time in the program, sector, microcredit purpose, financial funds raised, and the social value of microcredit in micro-entrepreneurship.

Thus, we proceeded with our analysis of the theoretical understanding of the substance of the texts collected through our interviews, diary notes and documental research in order to break down the content into simpler fragments which were classified according to the classifications adopted in the first step. It should be added that the operationalization of the codification of the collected indicators was realized with support from the Atlas.ti qualitative analysis software, which was used to organize the reports and create subject categories, with the scope to validate the results.

We then performed cluster analysis, considering the scale classification variables for SI, whose main objective was to define the structure of the indicators, so that more similar observations could be placed in the same group (Fávero et al., 2009). The groups were allocated in a non-hierarchical manner by using the K-Means Method, which is based on the representation

of k groups formed by the observations which are closest to their means (Williams, 2011). According to Fávero et al. (2009), non-hierarchical procedures are applied to group participants, whose initial number is defined by the researcher. Thus, we have adopted three clusters in this step to characterize this sample.

To verify the sociodemographic characteristics of the clusters, a descriptive analysis was performed using cross-referencing between the clusters and the frequencies of the sexes, age groups, education, income, time in the program, sectors, and products. These statistical analyses were performed with the help of the Statistical Package for the Social Sciences [SPSS] Version 23.0.

4 Results and Discussion

This section is devoted to a discussion of the study's results and the understanding of its central concepts. In effect, it applies D'Amario and Comini's classification scale (2020) giving priority to its dimensions and subcategories of analysis. In addition, we present the results obtained by our cluster analysis.

4.1 Type Dimension of Social Innovation

For the "Type" dimension, D'Amario and Comini (2020) consider the source of their SI classification to be the definitions offered by the Oslo Manual (OECD, 2005), adapting them to a social objective focused on the results. This choice is justified because it deals with material which is still being constructed, and as a result, a consensus about its specific meaning has not yet been reached (Comini, 2016). We can add the argument that since most studies associate SI with non-profit organizations (D'Amario & Comini, 2020), this study seeks to deepen the understanding of SI by adopting a different sample.

Therefore, we intend to understand the way in which micro-entrepreneurial business models generate socio-environmental innovation, observing the product, marketing and organizational solutions which have had the potential to create socio-environmental value for a community.

Initially we calculated the averages of the responses for scale items according to the SI subcategories. Table 5 displays the "Type" dimensions which are analyzed in this study.

Table 5
Description of the Type Dimension Variables

Variable	Average	Minimum	Maximum	Standard Deviation
Product	4.991	3.000	6.000	0.979
Marketing	4.428	1.000	6.000	1.588
Organizationa l	3.954	1.000	6.000	1.539

Source: Research data.

In Table 5, we can verify the averages of each item related to the SI subcategories of product, marketing and organizational as variables to compare micro-entrepreneurs based on the characteristics of the sample profile. The largest average value in this dimension was for the product variable (average = 4.991), followed by marketing (average = 4.428), and organizational (average = 3.954) which are analyzed separately below.

4.1.1 Product social innovations

Product SIs are understood to be the introduction of a new good or service or a significantly improved one in terms of its characteristics or uses (OECD, 2005). We observe in *hoc sensu* significant improvements in technical specifications, components and materials, incorporated software, ease of use, or functional characteristics in micro-enterprises.

According to Table 5, all of the items of the product subcategory displayed response averages above “4”, demonstrating agreement that their products/services have innovative functional characteristics, within the scope of better meeting consumer demands, which are perceived as valuable, mainly for those in situations of social vulnerability.

Interviewee B1 (2021), who works in the eyeglass frame market, stresses the offer of services to bring clients to take eye exams in clinics offering insurance coverage, facilitating access to ophthalmologist appointments, and agile service in terms of the manufacture of glasses. Interviewee B26 (2021), meanwhile, operates as an artisan who works with cardboard, fabrics, plastics, and discardable products and transforms them into flowerpots, key chains, floral arrangements, and wreaths, stimulating the environmental awareness of these consumers.

Interviewee B27 (2021) rents out inflatable toys, reinforcing the role of innovation in the functionality of his product designs, integrating three characteristics into a single product: reduced weight, less noise from the motor, and updated machinery due to his investment.

Interviewee B34 (2021) works in the pastry shop segment and states that the creation of flavors is based on experience and tastings. She adds that with the help of her daughter and internet knowledge, she has improved her decoration techniques and thus can now realize the dreams of her clients.

We can observe that the interaction with the customer is a common strategy in creating the design of a product/service. As related by Interviewee B15 (2021), who works in the manufacture of furniture, “[...] the creative process of a new product is performed together with the client paying attention to desires associated with new product research”. This fact can be the crucial difference in executing a new project.

Molnár (2017) tells us that access to microcredit enables people to satisfy needs that are not met via the market, introducing new products, improving processes, implementing significant changes in product placement, which characterize types of social innovations for the scope of social objectives.

Thus, having identifying consumer needs, micro-entrepreneurs emphasize that intended or realized changes in their products/services seek to meet consumer demands in the best manner possible in which the values perceived by their clients generate affection, trust, gratitude, satisfaction, dreams, joy, and happiness, by uniting quality with the providing of a product/service (7 of 38 interviewees: B1; B13; B14; B15; B27; B29; B34, 2021).

These reports corroborate Cervantes et al. (2017), because they demonstrate that microfinance drives the development of most popular strategies, stimulating product innovation, especially the creation of value in alterations of the characteristics perceived by its beneficiaries.

4.1.2 Marketing social innovations

Marketing SIs are analyzed through the implementation of a new marketing method which introduces significant changes to a product’s design or its packaging, product placement, promotion, or pricing (OECD, 2005).

All of the marketing subcategories exhibit average responses greater than “4”, however the overall average among items in this subcategory was lower than those for the items of product SIs.

With the advent of the COVID-19 pandemic, many micro-entrepreneurs had to adapt the way they sold their products/services. We may note their interactions with digital media and technological tools in their businesses (5 of 38 interviewees: B1, B8, B10, B19, B29, 2021). As reported by Interviewee B10 (2021) “[...] with the pandemic, I needed to invest in online sales... I managed to expand my regional sales”.

Even though the growing interaction of beneficiaries with digital media was brought about by the advent of the COVID-19 pandemic, we may observe in correlated studies an interest in global mobility in microfinance policies as a new approach to the market (Cordeiro 2020).

Thus, Interviewee B29 (2021) emphasizes the creation of a pizzeria profile on Instagram and a partnership with a neighborhood digital influencer as a means of promoting her products and services. In terms of a lack of funding or knowledge of digital media, community websites stand out as a way promote local business, as related by Interviewee B28 (2021).

Meanwhile, Interviewee B31 (2021), who works in the cosmetic and perfume segment, states that in addition to using digital media, she sells her products by offering compact kits as a promotion strategy on commemorative dates which was perceived as a new design that fits her consumer profiles, increasing their consumption.

On the other hand, a certain reluctance/fear was noted in some micro-entrepreneurs in terms of employment in digital media, as can be seen from the interviews with B12, B30, B35, B36 and B38 (2021). This comes from a fear of having suspect clients who may not pay their bills.

Another strategy among the beneficiaries is holding product-related bingos, bazaars, gifts, and raffles for their consumers (5 of 38 interviewees: B2, B3, B4, B11, B35, 2021). Moreover, some beneficiaries related difficulties in reducing their prices due to the resale of their products/services which already have low profit margins (4 of 38 interviewees: B11, B14, B28, B35, 2021) to give priority to client fidelity through quality customer service, instead of increasing their sales volumes.

Therefore, the studies that focus on SI actors are not merely restricted to negotiations between economic agents, because they also are based on an understanding of articulation and cooperation (Batista & Correia, 2021).

4.1.3 Organizational social innovations

Organizational SIs are characterized by the implementation of new organizational methods in terms of micro-enterprises, the organization of the workplace, or external relations (OECD, 2005).

The averages for the responses to the items in this subcategory are below “4”, which demonstrates poor organizational abilities on the part of these micro-entrepreneurs, mainly in relation to Items ITorg 2 and 3 which identify whether the organization seeks to acquire new knowledge and methods by interacting with social and/or environmental goals.

This can be justified by the profile of the interviewees who are mature individuals with an average age over 40 (60.0%), with more than ten years’ participation in the microcredit program (69.0%) on average. Together with a need for new capacities and new methods of interaction, they are “satisfied” with the results of their businesses or with being a faithful client (16 of 38 interviewees: B2, B3, B9, B10, B11, B13, B16, B17, B20, B21, B23, B31, B32, B36, B37, B38, 2021).

In line with Tardif and Harrisson (2005), the main types of social innovations are: technical (dealing with products or technology); socio-technical (a technology within an organizational technology); organizational (a technology in an organizational environment which offers improvements specifically for workers); institutional (solutions emanating from actions by the state); and social (developed by agents of civil society). Within this context, it is valid to indicate that the innovations developed by the micro-entrepreneurs who benefit from microcredit in Grande Bom Jardim are of the technical type, because they involve improvements in products/services in terms of their characteristics or uses, with the objective being to provide improvements that will benefit the common good.

4.2 Depth Dimension of Social Innovation

The depth dimension involves the analysis of innovations that promote changes, but not all forms of change qualify as innovations, because only those of a qualitative nature which deconstruct common practices and knowledge in a specific area are termed innovations (D’Amario & Comini, 2020).

Thus, the SIs were classified according to their magnitude and categorized on three levels, based on whether they are incremental, disruptive, or institutional (D’Amario & Comini, 2020; Nicholls & Murdock, 2012). The averages of the responses for the scale items organized by the SI subcategories of the depth dimension are displayed in Table 6.

Table 6

Description of the Depth Dimension Variables

Variable	Average	Minimum	Maximum	Standard Deviation
Incremental	4.632	2.000	6.000	1.321
Disruptive	4.832	2.800	6.000	0.989
Institutional	4.750	2.250	6.000	1.069

Source: Research data.

As can be observed in Table 6, the variable with the highest average value in this dimension was the disruptive variable (average = 4.832), followed by the institutional variable (average = 4.750) and finally the incremental variable (average = 4.632) which are detailed below.

4.2.1 Incremental social innovations

Incremental innovations are designed to overcome failures in the market and are characterized as any type of improvement in already existing products and/or services which does not affect their uses (D’Amario, 2018). Considered to be relevant from the point of view of productivity, they do not introduce structural changes in the economy, its products and/or services and seek to meet the public’s needs in a more efficient and effective manner (Lee et al., 2019; Nicholls et al., 2015).

The concession of microcredit to the beneficiaries of the enterprise development program enabled them to leave informal work behind, changing their lives, providing the physical structuring of their business, and reducing the acquisition costs of raw materials and/or machines (10 of 38 interviewees: B1, B8, B13, B14, B15, B17, B21, B26, B27, B29, 2021), as related by Interviewee B14 (2021) “[...] when I became an entrepreneur and physical educator, I realized that I am an inspiration for marginalized young people, as they believe that they can leave idleness

too and have a future”. The main improvement through microcredit funding was the reduction of family debt, because most of the micro-entrepreneurs rely on loan sharks to open their businesses due to their lack of real guaranties for the financial market.

This fact corroborates correlated investigations which have found that microcredit contributes to income and employment for the development of vulnerable regions, mainly due to a lack of access to financial resources, which thus constitutes a barrier to entrepreneurship and the maintenance and expansion of commercial activities (Salgado & Aires, 2018; Schönerwald & Vernengo, 2016).

We may observe that there is little reduction in the environmental impact and/or little knowledge of strategies that seek this innovation, a result which is line with Item IPcrem3, which had an average response of “3.87” in the analyzed sample. This finding can be justified by the lack of knowledge or the lack of the perception of its importance on the part of these micro-entrepreneurs.

Actions were identified, however, that seek to improve environmental impacts and/or knowledge, such as: the use of solar power, the recycling of raw materials, partnerships with companies that adopt the selective collection of their packages, as well as training the community about how to dispose of wastes (6 of 38 interviewees: B8, B13, B15, B17, B21, B26, 2021).

Through the recognition of environmental damage, which refers to the discarding of wastes and energy costs, micro-entrepreneurs plan actions and responses to the identified problem. Effectively, this results in a social action dynamic, which is characterized by empathy, the capacity to mobilize resources, autonomy, and interpersonal relationships through social consensus (Tardif & Harrisson, 2005).

4.2.2 Disruptive social innovations

Disruptive social innovations are those which alter the social system and involve entrepreneurs who identify systemic problems and propose transformational solutions (D’Amario, 2018). A success story concerning disruptive innovation in the microcredit area is the bank Grameen, founded by Muhammad Yunus, which is a reference for financial and social inclusion for beneficiaries living in vulnerable communities (Cervantes et al., 2017; Von Jacobi et al., 2017; Schönerwald & Vernengo, 2016).

Social influence derived from microcredit is demonstrated in correlated studies with an emphasis on improvements in the family environment and socioeconomic development (Cervantes et al., 2017; Schönerwald & Vernengo, 2016). We can observe from the reports of this study the return and permanence of children in school, the establishment of healthy environments in local communities, and empowerment, mainly due to the participation of women in the work force (15 of 38 interviewees: B1, B2, B3, B8, B11, B12, B13, B15, B17, B21, B29, B30, B34, B35, B36, 2021). Furthermore, we observed that beneficiaries tend to develop a greater sense of community, as reported by Interviewee B8 (2021) “[...] my purpose is to give everyone an opportunity, just like Crediamigo gave me, to train and invest for the good of my community”.

Maestriperi (2017) and Salgado and Aires (2018) reinforce the idea that empowerment is highlighted in the logic of offering microcredit to women, because it reflects their capacity to perform new economic activities. Human and social development, the ties of affection that they constitute, female empowerment, solidarity, utility, and opportunity are some of the accomplishments recognized by the interviewees in terms of their experiences in the program (15 of 38 interviewees: B1, B2, B3, B8, B11, B12, B13, B15, B17, B21, B29, B30, B34, B35, B36, 2021).

Tardif and Harrisson (2005) ratified the goals of SI, configured as a common good on a local scale which is of general interest to the people involved. In this way, agents seek interactions through cooperation, reconciling individual and collective interests.

In the discourse of Interviewee B1(2021) regarding entering partnerships with organizational institutions (schools, social projects, and churches) to offer tennis shoes and glasses at an accessible price to low-income children, it was perceived that this initiative paved the way for these socially excluded children to return to the classroom. Thus, stimulating their return to school made it possible to improve the social and environmental development of families in situations of vulnerability.

Interviewee B21 (2021), in turn, reports that employing drug users and individuals who live lives of crime or are in situations of risk is an initiative that is realized to give these people an opportunity to change their lives. She adds that there is weekly prayer with a pastor from her church as a strategy of religious education. These actions repeatedly obtain good results in reducing the crime rate in her neighborhood and also advance the economic development of her business.

Thus, certain local agents, once they have identified a problematic environment, initiate social change reconstituting social ties through the introduction of other social practices (Tardif & Harrison, 2005).

4.2.3 Institutional social innovations

Institutional innovations are those which reconfigure the market's structures and standards (D'Amario, 2018), generally through the repositioning of new technologies in social rather than economic directions (Nicholls & Murdock, 2012).

The challenge of microfinance programs is offering financial inclusion to the poorest citizens, performing a fundamental role in local economic development, and above all social and political transformation (Mahmuda et al., 2014). In terms of this perception, we can highlight the words of Interviewee B29 (2021) about the changes in economic reality caused by the concession of microcredit: “[...] we needed an opportunity, and thanks to Crediamigo, we’ve achieved this development with a lot of work.”

It may be observed from the reports of Interviewees B13 and B38 (2021) that the main change due to microcredit fundraising occurred in the family environment, because it enabled female empowerment (daughters and/or sisters), creating job opportunities through entrepreneurship. They add that now they are sources of inspiration/motivation for the community, stressing that at first they were street vendors of basic goods who became entrepreneurs with development.

Therefore, microfinancing seeks to reduce poverty and develop the micro-entrepreneur, ranging from the concession of microcredit to the opening of businesses, supporting the development of new businesses, and proposing policy measures which improve the capital and productivity of its beneficiaries in a sustainable manner (Molnár, 2017; Mahmuda et al., 2014).

4.3 Scope Dimension of Social Innovation

The “Scope” dimension, according to Comini (2016), is described in SI as local, regional, national or global customer service, verifying the predominant scope of customer service for types of organizations (associations, foundations, cooperatives, and companies).

Grande Bom Jardim is an area made up of five official neighborhoods of the city of Fortaleza: Granja Lisboa, Granja Portugal, Bom Jardim, Canindezinho, and Siqueira. It represents

a population of 211 thousand inhabitants (IBGE, 2010) and the mentioned neighborhoods are among the ten poorest neighborhoods within the city of Fortaleza.

It should be added that the discrepancy between the income of the rich and the poorest residents of the Metropolitan Region of Fortaleza [MRF] increased during the period of social isolation caused by the COVID-19 pandemic. The MRF had the fifth largest index of inequality in the country during the second quarter of 2020 (Albuquerque & Ribeiro, 2020).

Thus, we understand that the phenomenon of innovation analyzed in the Grande Bom Jardim office is local and localized, because its agents share a geographic, relational, organizational, and institutional proximity.

4.4 Cluster Analysis of the Social Innovation Dimensions

This module is devoted to a discussion of our research results in terms of an analysis of the clusters of the observed variables that refer to D'Amario and Comini's SI classification scale (2020), associating the clusters obtained with the sociodemographic data that makes up this sample.

The objective of selecting cluster analysis was to identify which groups of program beneficiaries have the greatest propensity for an SI orientation, and to trace the profile of these social agents in relation to each taxonomic dimension of SI. For this study, we decided upon three clusters. In this manner, we verified the behavior of six variables in each of the clusters, as can be seen in Table 7.

Table 7

Cluster Analysis of the SI Variables

Variable	Cluster 1	Cluster 2	Cluster 3	ANOVA	
				F	p-value
Product	4.361	5.614	4.381	12.463	< 0.001
Marketing	3.563	5.684	2.500	40.089	< 0.001
Organizational	2.583	4.842	3.893	13.132	< 0.001
Incremental	3.333	5.175	5.381	14.955	< 0.001
Disruptive	3.983	5.379	4.800	11.471	< 0.001
Institutional	4.146	5.461	3.857	15.075	< 0.001
SI Orientation	Conservative s	Innovator s	Visionaries	Total Observations	
Number of Beneficiaries	12	19	7	38	

Note. Source: Research data.

The values of Table 3 indicate the average of each variable (construct) in each of the final clusters, and they make it possible to identify and evaluate the obtained clusters (Fávero et al., 2009). It should be noted that all the constructs utilized in the study are statistically significant (p-value < 0.001) for the formation of these clusters. Cluster 1 covers 12 cases (31.58%); Cluster 2 covers 19 cases (50.00%); and Cluster 3 covers 7 cases (18.42%), which demonstrates an unbalanced division of the cluster observations.

In Cluster 1, we verified that overall, the observed SI classification scale variables exhibited values below the averages of the other clusters. However, in examining the SI marketing and institutional variables, we found that that the averages for Cluster 1 were greater than those for Cluster 3. Thus, this demonstrates that the agents in this cluster stand out in terms of SI initiatives associated with marketing actions and institutional changes (e.g., increased sales volume through promotional activities or alterations in their product/service placements), compared to Cluster 3. This fact is positive for innovative behavior, because it demonstrates that these participants are engaged with the market’s structure and also mobilize people to act in this area, talking about the importance of updating a portfolio of products/services (Paiva et al., 2019), directed toward making them more accessible for people in situations of social vulnerability.

It should be noted that the highest index in this cluster refers to the Institutional SI construct, which points out the fact that people exhibit behavior that is focused on changes in social relationships due to the opportunity generated by microcredit, which makes inclusion in social and economic structures possible through new technologies directed towards minorities, or in other words, they need the stimulus of frequent change, but prefer to work on only one problem at a time. The lowest index, on the other hand, was for Organizational SI, demonstrating little use of new methods of partnerships or sharing knowledge. Overall, this cluster displays the least behavior which can be referred to as propensity for SIs, compared to the other clusters.

Interviewee B24 (2021) says “[...] I don’t do any social action... the only thing I do is sell cheaper”. Interviewee B5 reported that (2021) “[...] my service is not something new in the community, but I try sell more affordable products”. Finally, Interviewee B38 (2021) states that “[...] I do not invest in advertising, as my customers are loyal”. Such reports corroborate the perception that the beneficiaries identified in Cluster 1 do not aim to generate collective social changes, but act in a more conservative manner. Based on this characteristic behavior, we will therefore term Cluster 1 the “Conservatives”.

Cluster 2 displays behavior linked to opportunities for social change relevant to their communities, with actions directed towards creativity and a concern for the environment, characterized by aspects such as recycling and using renewable energy with the intent of reducing operational costs. This group also expresses a high index in terms of the Disruptive SI variable, which is a positive behavior in terms of social justice, because it demonstrates actions of social participation and/or policies for people in situations of social vulnerability (Cervantes et al., 2017; Schönerwald & Vernengo, 2016).

In terms of the SI type of this cluster, we can verify that it has an elevated index in all three variables (that is products, marketing and organizational) which indicates a preference for dynamism and creativity, because these are people who exhibit innovative behavior which can be characterized as stimulating, creative, and dynamic. Thus, they prefer to work on various problems at the same time, rather than deal with them serially.

The way in which people integrate into heterogenous groups was analyzed by Jang (2017), which represents an advance in the theoretical knowledge of the collective creativity of multicultural teams in which there is a multicultural member, and it promotes integration among

people. This fact highlights the effect of greater creativity in multicultural teams, which adds a competitive advantage in points related to the relevance of diversity (Rock et al., 2016).

Interviewee B21(2021) revealed that “[...] I hire ex-convicts so they can get out of marginalization, as they don’t have the opportunity”. In line with this, Interviewee B6 (2021) said "I teach artistic makeup courses in the community, because teaching generates education, creates opportunities to change”. Furthermore, Interviewee B26 (2021) stated that “[...] working with product recycling generates awareness in the community, I realize that I am an inspiration to young people". Such reports from the beneficiaries of Cluster 2 allow us to infer that their social actions aim at collective social transformation due to the empathy they experience in the environment they live, indicating a greater propensity to SI. Thus, based on these characteristics, we will term Cluster 2 to be the “Innovators”.

The members of Cluster 3 display varied forms of behavior for all of the SI constructs, given that they have low indices of marketing and institutional SI and high indices in terms of product, organizational, disruptive and incremental SIs, which indicates that they are not concerned with market structures (*e.g.*, actions focused on product and service placement), but are engaged in reducing environmental impacts and improving new products/services.

They espouse the idea that the solution to environmental problems does not necessarily come from technology, but rather changes in behavior, given that inappropriate or poorly adapted behavior favors negative occurrences in relation to the environmental order (Maloney & Ward, 1973). It should be stressed that the incremental SI actions of this cluster have the highest index, compared to the other clusters, which indicates that this cluster is made up of people who are capable of developing and improving products/services to reduce costs and environmental impacts.

Interviewee B13 (2021) states “[...] I teach sewing classes for women who have suffered domestic violence to have extra income, as it is the only way for them to change their lives”. On the other hand, Interviewee B25 (2021) revealed “[...] I don't feel the need to train myself, I prefer to give my children the opportunity to study". Regarding the management practices adopted, Interviewee B36 (2021) states that “[...] the best promotion of my business is “word of mouth” – I believe more in the interaction with the customer”. It is observed that in this group, although they recognize the importance of transforming the environment in which they live, their actions are directed towards the internal environment (*e.g.*, close people and family members), characterizing

their pragmatic transformative vision. Based on these characteristics, we term this cluster the “Visionaries”.

Table 8 displays the cross-referencing of the data for the three clusters and the sociodemographic data for the 38 interviewees, which enables us to verify the characteristics of each group in terms of gender, age group, income, time in the program, product used, sector, and education.

Table 8

Groupings of Sociodemographic Variables by Clusters

Characteristics	Classification	Cluster 1		Cluster 2		Cluster 3	
		N	%	N	%	N	%
Gender	Male	3	25.00	13	68.42	1	14.29
	Female	9	75.00	6	31.58	6	85.71
Age Group	Up to 35	3	25.00	7	36.84	1	14.29
	36 to 45	3	25.00	4	21.05	2	28.57
	46 or Over	6	50.00	8	42.11	4	57.14
Monthly Income	Up to Two Minimum Wages	5	41.67	3	15.79	1	14.29
	From 2 to 5 Minimum Wages	5	41.67	7	36.84	2	28.57
	Above 5 Minimum Wages	2	16.67	9	47.37	4	57.14
Time in the Program	Up to 5 Years	4	33.33	6	31.58	2	28.57
	From 6 to 10 Years	7	58.33	10	52.63	3	42.86
	Over 10 Years	1	8.33	3	15.79	2	28.57
Product	Individual Cashflow	10	83.33	14	73.68	5	71.43
	Crediamigo Plus	0	0.00	4	21.05	1	14.29
	Fixed Investment	2	16.67	1	5.26	1	14.29
Sector	Commerce	11	91.67	11	57.89	5	71.43
	Services	1	8.33	5	26.32	2	28.57
	Industry	0	0.00	3	15.79	0	0.00
Education	Junior High School or Less	8	66.67	6	31.58	2	28.57
	High School Graduate	4	33.33	9	47.37	5	71.43
	College Graduate	0	0.00	4	21.05	1	14.29

Note. Source: Research data.

Verifying the frequency of the sociodemographic variables in each of the clusters, it is notable that in Cluster 1 we have a predominance of female beneficiaries (75.0%), half of whom are over 46 years of age (50.0%). In this cluster, we can highlight the percentage of beneficiaries with a junior high school education (66.67%), of which a large proportion earn two to five minimum wages in monthly income (41.67%), have been in the program from 6 to 10 years (58.33%), work in commerce (91.67%), and have selected the individual cashflow product (83.33%).

Cluster 2 has the highest incidence of male beneficiaries (68.42%), up to 45 years of age (57.89%), with greater frequencies of the highest levels of education, high school graduates (47.37%) and college graduates (21.05%). They registered income above five minimum wages (47.37%) and had the highest incidence of having 6 to 10 years in the program (52.63%). This group had the highest frequency of selecting the Crediamigo Plus product (21.05%), which denotes interest in acquiring knowledge and business training compared to individual cashflow (73.68%). We verified the incidence of businesses in Industry (15.79%), in addition to Commerce (57.89%) and Services (26.32%).

Cluster 3 had the second highest frequency of female beneficiaries (85.71%), with most 46 years of age or older (57.14%), with high school educations (71.43%), income above five minimum wages (57.14%), with six to ten years in the program (42.86%), having more businesses in the Commerce segment (71.43%) than Services (28.57%).

The results of the cross-referencing of the three clusters with the sociodemographic data demonstrate the predominance of the female sex in microcredit, which corroborates previous studies, and this is a positive finding (Silva et al., 2016; Salgado & Aires, 2018), especially when we consider that the lack of access to financing impedes female entrepreneurship as it does female participation in the modern market economy.

It should be noted that the male sex demonstrates a greater propensity for an SI orientation, due to its greater participation in Cluster 2, which is characterized by a younger public that seeks money for training (Crediamigo Plus) rather than traditional cashflow (Individual Cashflow). In effect, it adds to this discussion the special attention paid to this type of product by microcredit beneficiaries when we analyze this cluster's innovative behavior, suggesting a greater SI orientation can be associated with diversification in terms of the selected product. Previous studies have noted that female beneficiaries tend to prefer to raise funds in solidarity groups or individually

by cashflow due to the more stable and conservative trajectories of their businesses (Mendonça & Soares, 2016; Salgado & Aires, 2018), and these characteristics are limiting factors in terms of an SI orientation.

Moreover, we can observe that income, education, and time in the program can exercise positive influences in terms of an SI orientation, which has been identified as one of the main differences between Cluster 1 (conservatives) and clusters 2 and 3 (innovators/visionaries). Thus, raising funds through microcredit offers economic, political, and social advantages when it makes micro-enterprises more dynamic and capable of evolution (Mendonça & Soares, 2016), making it possible to take advantage of economic opportunities that offer better social involvement in various dimensions.

5 Conclusion

The purpose of this paper was to assess the social innovation arising from the granting of microcredit, as well as the roles played by its social actors. This study's results demonstrate that the SI actions promoted by the beneficiaries of the Crediamigo Program in the Grande Bom Jardim area in Fortaleza, Ceará foster social and economic inclusion, enabling the creation of more jobs, empowerment, and a better quality of life, characterized by incremental, disruptive and institutional innovations, in terms of their depth, and product and/or service type innovations, implementing new methods of marketing which facilitate consumption by people in situations of social vulnerability of local scope.

To arrive at these conclusions, we have identified the fact that in the “Type” dimension, local community actions have set in motion changes in the social and economic structure through market, technical and organizational transformations. In terms of the “Depth” dimension, we observe that the institutional arrangements are mainly characterized by institutional and disruptive SIs as a function of improvements and changes in social relationships, increasing the level of participation of socially excluded groups, as well as transformations in the lives of people living in situations of vulnerability as they face social challenges, creating social justice and empowering a portion of the population which has historically been considered excluded.

In terms of what is applicable to the “Scope” dimension, the actions of these beneficiaries consist of a direct inflow on a local scale in Grande Bom Jardim, and their actions have essentially

economic and social objectives of family interest (*e.g.*, female empowerment, improvements in quality of life, and development) and they envision local solutions which are more appropriate to their context. Moreover, this drives a differentiated vision of these social actors (program beneficiaries) in terms of the social role that they play in social innovation initiatives in circumstances of vulnerability. For women, in particular, access to credit not only expands their entrepreneurial possibilities, it promotes active social behavior through attitudes characterized by solidarity and community.

Thus, from the perspective of the model developed by D’Amario and Comini (2020), the concession of microcredit is an SI instrument that transcends the financial inclusion of socially vulnerable individuals. It develops the entrepreneurial capacity and spirit of solidarity on the local plane. We note, however, that the conception of many of these SI initiatives is still in its initial stages in Grande Bom Jardim, given that their current actions denote a lower degree of formalization and professionalization, which reduces their social impact.

Restrictions (*i.e.*, existing barriers to the development of social innovation initiatives) have been identified in the form of financial and environmental management capacity on the part of these beneficiaries in the implementation of their activities. In this manner, even though social changes and innovations take place spontaneously in Grande Bom Jardim, BNB’s Crediamigo microcredit program needs to have closer supervision in terms of the results of its implemented actions, as well as new initiatives in terms of their measurement and the training of its beneficiaries.

As theoretical-empirical contributions, this study advances in the discussion of public policies that facilitate social development and demonstrates the role of microfinance in stimulating social innovation through an evaluation of the social impact of its programs (Molnár, 2017). In addition, we have studied the dimensions of social innovations and the roles of its actors, providing empirical evidence to social entrepreneurs or new micro-entrepreneurs in terms of the types/scope of social and economic results and the best allocation of organizational resources.

As for the managerial contribution, the classification of beneficiary profiles in terms of SI orientation (*i.e.*, innovators, visionaries, and conservatives) enables clarity to microfinance developers in defining credit granting strategies to promote social innovation projects based on the microentrepreneur’s propensity to innovation. The results of the cluster analysis make it clear that there are differences regarding the transformative perspective of a microcredit innovation according to the profile of the beneficiaries. Not all beneficiaries “transform” their perspective to

more collective actions, many maintain their “individualistic” perspective, using microcredit and the demand for collective organization only pragmatically to obtain social benefits. Finally, the research findings promote a better understanding of the purpose of the social function of microcredit, contributing to sustainable development in its area of operation and reducing social inequalities.

5.1 Limitations and Research Agenda

As a limitation, the pandemic period in which the research data was collected stands out, making it difficult to expand the sample and the possibility of comparing the results with other locations benefiting from the Crediamigo program. Furthermore, we can cite access to micro-entrepreneurs in the Grande Bom Jardim area, because it is situated in a region of restricted access within the municipality of Fortaleza.

For a future agenda, we recommend research that analyzes the social innovation ecosystem on a micro scale that might evaluate different strategies adopted by micro-entrepreneurs to expand the scale of microcredit impact. Moreover, we suggest research that compares the experiences of distinct micro-entrepreneurs groups (*e.g.*, microcredit beneficiaries and non-beneficiaries) to amplify the discussions on the relationship between microfinance and social innovation. Furthermore, geographical factors can impact social innovation, especially when considering programs in different Brazilian contexts, given the country's diversity and vast territory. Therefore, it is suggested that future research include geographical variables in the analysis.

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