

Digital social entities, valuable communities: How digitalization enables value co-creation for social enterprises

HIKMAT MURSALZADE* 

Doctoral School of Business and Management, Corvinus University of Budapest, Budapest, Hungary

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ABSTRACT

Enterprises prioritizing social issues over profit maximization can lead to value co-creation, especially in marginalized and unprivileged communities. In this regard, this paper explores underlying theoretical mechanisms that tie digitalization and value co-creation together for social entrepreneurship's development. The article aims to identify how digitalization enables value co-creation for social enterprises. We conduct multiple case studies, have 11 in-depth face-to-face interviews with social entrepreneurs from Azerbaijan and synthesize the findings from primary and secondary data. As a result, we reveal that digitalization enables value co-creation for social entrepreneurship through a new phenomenon, which we call Data-driven Social Co-creation (DSC), and its subcategories such as efficiency, resource mobilization, feedback loops and data utilization. Finally, we recommend the DSC framework which shows the relationship between digitalization and value co-creation in social entrepreneurship, and which is the main theoretical contribution to the social entrepreneurship literature. Additionally, we provide a research agenda on the respective research field.

KEYWORDS

digitalization, value co-creation, social entrepreneurship, data-driven social co-creation

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* Corresponding author. E-mail: Hikmat.Mursalzade@stud.uni-corvinus.hu

1. INTRODUCTION

Social entrepreneurship represents a business venture oriented toward benefiting society rather than solely maximizing individual benefits (Roberts – Woods 2005). Social enterprises involve identifying methods to create innovations, make use of resources, and tackle social needs to generate value (Wu et al. 2020). The primary objective of social enterprises is to bring about positive societal change (Dacin et al. 2010).

Meanwhile, digitalization, which is defined as increased use of digital technology by an organization, industry or country, is radically changing the way businesses operate (Brennen – Kreiss 2016). Despite digitalization's significant impact on entrepreneurship, there can be negative consequences in social aspects and overall, there is limited information available on its outcomes (Elia et al. 2020). However, digitalization also provides great opportunities for social enterprises, and one of these opportunities is collaboration with customers, which gives opportunities to co-create value (Lin et al. 2019), allowing them to jointly shape the product or service experience to align with their needs (Pralhalad – Ramaswamy 2004).

There is typically a collaborative relationship between social entrepreneurship, digitalization and value co-creation, enhancing the positive influence of each: digitalization simplifies communication, facilitating social entrepreneurs in co-creating value with different stakeholders; interconnection possesses the potential for bringing social change; technologies assist social entrepreneurs in creating novel solutions and adapting to evolving needs (Goyal et al. 2021; Aisaiti et al. 2021; Loukopoulos – Papadimitriou 2022; Chandna 2022).

Therefore, social entrepreneurship is positively affected by digitalization and, likewise, by value co-creation: digitalization increases sustainability (de Bernardi et al. 2019) and employee performance within social entrepreneurship (Wan – Liu 2021) while decreasing expenditures (Aisaiti et al. 2019; Goyal et al. 2021). Digitalization also contributes to accessibility and inclusivity in services (Srivastava – Shainesh 2015). Similarly, social entrepreneurship also involves value co-creation to foster a more inclusive, accessible and equitable society (Yáñez-Valdés et al. 2023). Overall, value co-creation is leading to increased emphasis on social enterprises (Ratten 2022).

Although there is significant separate research both on the social enterprises' digitalization and the value co-creation, there is limited research investigating digitalization's effect on value co-creation, and it is only in the context of traditional manufacturing companies (Lenka et al. 2017). Additionally, from the practical side, social entrepreneurs can think that the industry is not exploiting digitalization for value co-creation enough and may increase their usage of technologies to generate value, but many still lack a comprehensive understanding of digitalization for value co-creation. Thus, further research is necessary to better understand the effects of digitalization and its correlation with value co-creation from a new perspective with different social approaches and in the context of social entrepreneurship. Therefore, we have an objective of connecting digitalization and value co-creation together for social entrepreneurship's development. By taking this research objective into consideration, we attempt to answer the following research question: How does digitalization enable value co-creation for social entrepreneurship?

The applied methodology is a multiple case study. Thus, the process had the phases of conducting the interviews, transcribing, translating and editing them, and finally, qualitative analysis of them via NVivo software. To address the research problem, this study builds on qualitative data from 11 interviews to conceptualize four underlying components of



digitalization enablers for value co-creation, namely, efficiency, resource mobilization, feedback loops, and data utilization. After revealing these four enablers, we came up with the new phenomenon of Data-driven Social Co-creation. This research identifies and explains how digitalization enables value co-creation in the social entrepreneurship context through different underlying mechanisms and contributes to the social entrepreneurship literature. Finally, we provide theoretical contributions, recommend a framework and research agenda on digitalization and value co-creation for social entrepreneurship.

2. THEORETICAL BACKGROUND

There is much research on social entrepreneurship, start-up learning processes and entrepreneurship education; however, they mainly focus on the correlation between entrepreneurship and knowledge management (Jáki – Huszák 2023). It is natural that from the standpoint of organizational learning, management students can gain valuable insights from technology start-ups on how to incorporate an entrepreneurial mentality into their management curriculum (Beke et al. 2023). Other than management students, there is also research on founders of start-ups as a distinct category of entrepreneurs (Virágh et al. 2024). Entrepreneurship's new and distinct category, social entrepreneurship, can also be interpreted from different aspects, including prohibition of profit sharing and democratic operations: for example, Muhammad Yunus, the founder of Grameen Bank, which gave microcredits to unprivileged and marginalized communities, based their operations on the basis of democratic principles and profit sharing, so that the social entrepreneurial activities of women would be more successful (Yunus 1999). All in all, even though there is much research on traditional entrepreneurship, academic studies with social enterprise founders are scarce, especially ones investigating digital transformation and value co-creation.

Digitalization, social media and web-based tools that let entrepreneurs and consumers communicate by sharing, exchanging information and generating value, have completely changed the way people connect (Frau et al. 2023). Digitalization mitigates societal challenges (Zahra 2021) and increases sustainability (de Bernardi et al. 2019) and collaborations in social entrepreneurship (Loukopoulos – Papadimitriou 2022). Digital financing also emerges as a facilitator for individuals addressing societal issues (Martín 2020; Chandna 2022), while simultaneously decreasing expenditures (Aisaiti et al. 2019; Goyal et al. 2021). In countries with low levels of digitalization, the absence of social enterprises is likely to contribute to diminished national well-being (Torres – Augusto 2020). Digitalization, especially the utilization of big data exhibits a positive correlation with employee performance within social entrepreneurship (Wan – Liu 2021). Digitalization also contributes to improved geographical accessibility, cost reduction, and ultimately fosters inclusivity in healthcare services (Srivastava – Shainesh 2015).

Social enterprises also leverage value co-creation to contribute fostering more inclusive, accessible and equitable society (Yáñez-Valdés et al. 2023). For example, through the combined efforts of digitalization and value co-creation, OurCityLove social enterprise and its digital application plays a pivotal role in bridging service gaps (Lin et al. 2019). Instances of value co-creation also increased during the pandemic: collaborative endeavors involving government, social enterprises and unprivileged communities have emerged and value co-creation have been catalyzed, leading to heightened emphasis on social entrepreneurship (Ratten 2022).



In practice, there is typically a collaborative relationship among digitalization, value co-creation and social entrepreneurship, enhancing the positive influence of each: digitalization simplifies communication, facilitating social entrepreneurs in co-creating value with different stakeholders; interconnection possesses the potential for bringing social change; technologies assist social entrepreneurs in creating novel solutions and adapting to evolving needs (Loukopoulos – Papadimitriou 2022; Chandna 2022; Mursalzade et al. 2023). Furthermore, all three concepts are in close harmony with the Sustainable Development Goals (SDGs) outlined by the United Nations: The progress towards attaining the SDGs can be hastened through digital transformation, facilitating social development. Social entrepreneurship involving innovative sustainable business models strives to generate positive social and ecological changes (Lin et al. 2019; Ratten 2022; Mursalzade et al. 2023).

Even though there is separate research on social enterprises' digitalization and value co-creation, yet there is scarce empirical research investigating digitalization's effect on value co-creation in social entrepreneurship. Consequently, further research is necessary to better understand the effects of digital transformation and its correlation with value co-creation in social businesses. Due to the gap between the mentioned three research strands, we attempt to explore mechanisms connecting digitalization and value co-creation for improvement of social entrepreneurship and explain how digitalization enables value co-creation in social enterprises.

3. METHODOLOGY

We use multiple case study research to investigate the research question (Yin 2009). The chosen method allows for a comprehensive analysis of intricate social phenomena and for greater generalizability of any findings that emerge, as it allows replication of discoveries in more cases, and this, in turn, can aid the development of theories (Eisenhardt – Graebner 2007).

3.1. Case selection

Our research draws its conclusions from social and ecological enterprises, as focusing on social entrepreneurship is an essential step in addressing the difficulties that society is currently facing. We employed a theoretical sampling strategy to select cases which would likely contribute to the further development of the existing theory (Eisenhardt – Graebner 2007). For our study, we selected cases that exhibited certain pre-defined characteristics to avoid any selection bias. To be included in the study, the firms needed to 1) handle social or ecological problems, so they should be social or ecological enterprises and 2) provide access to key informants such as founders, co-founders, or chief managers of the firms. Additionally, we identified what kind of problem the enterprises are solving and who their targeted audience is. This approach allowed us to develop a more comprehensive and accurate theoretical framework and reduced the potential for bias in our selection process (Eisenhardt – Graebner 2007; Yin 2009).

We have chosen Azerbaijan as the main data collection area, and there were three main reasons for this: Azerbaijan is a transitioned country from a socialist to a capitalist regime, with its oil-rich developing economy (Aliyev et al. 2016). Secondly, research shows that social entrepreneurship thrives in countries with developing economies and relatively lower welfare levels (Torres – Augusto 2020). The third reason was the practicality and ease of data collection under



the specific time frame. Simultaneously, the fact that the findings are primarily based on Azerbaijan can be indeed a limitation and future research direction.

Additionally, we can also highlight the influence of Azerbaijani cultural context on adoption and effectiveness of digitalization in social enterprises, since cultural factors often play a crucial role in technology adoption and could provide valuable insights into why certain digital strategies succeed or fail in specific environments.

Out of 29 social entrepreneurs on our list, we finally conducted 11 in-depth interviews. We concluded our research after studying these cases, as theoretical saturation has been achieved (Saunders et al. 2018).

3.2. Data collection

To reduce the amount of inaccurate information, it is important to avoid retrospective sense-making, and that is why we merged information from various sources (Eisenhardt – Graebner 2007; Miles – Huberman 1994). We conducted interviews with knowledgeable individuals who were willing to share their insights on the topic of interest (Kumar et al. 1993). In detail, 11 out of 29 social entrepreneurs operating in Azerbaijan agreed to take part in our research and participated in the face-to-face in-depth interview stage. An interview protocol with semi-structured questions was used to explore how social enterprises leverage digital technologies and engage in value co-creation to achieve development and sustainability. The interview set was online using Microsoft Teams, due to the ease of recording both video and audio content. Interviews were recorded in July–November 2023 and took approximately one hour on average. After transcribing the interviews, if necessary, we sent the transcribed interviews to the informants for clarification, whether the grammatically edited versions reflected what they implied during the interview. 10 out of 11 interviews were in English, while one was translated from the Azerbaijani language (Table 1).

3.3. Data analysis

Using a theory-building approach, we created summaries of individual cases using primary data as the foundation. We used NVivo 10 software to analyze data through four coding steps, progressing from specific to general codes (Moi et al. 2018; Saldana 2015). We employed both inductive and deductive methods to study the available data. Initially, we took a deductive approach and used existing literature to interpret and analyze the qualitative data related to digitalization, value co-creation and social entrepreneurship. As an illustration, easiness, functionality, and crowdfunding codes were used both in the literature and by our informants. Secondly, we used an inductive approach to analyze the data and identify common themes, from which we developed new theoretical concepts (Kennedy – Thornberg 2018). For example, with the inductive approach, we came up with the codes of crowdsourcing, trust and privacy, feedback, and data analytics. We tried to identify several patterns that reflect the key ideas present in our dataset.

We created a detailed scheme from in-depth interviews, by coding every relevant quote or keyword. In light of our research question, subsequent analysis emerged from coding this data. Based on the quotes, insights and key results from 11 interview transcripts, we carried out the subsequent analysis (Fig. 1).



Table 1. Overview of the case studies

Profile of social enterprise	Solved problem	Target group	Primary data - interview	Secondary data - post description
Comics Studio	environmental awareness, social inclusion	youngsters, young adults	54 min	owned social media page
Vegan Sweets	unemployment, social inclusion	women with disabilities	74 min	owned social media page
Handcrafts; Comics	environmental awareness, social inclusion	artists, tourists, youngsters, young adults	31 min	owned social media page
Adaptive Clothes; Accessibility Maps	clothing, data-driven technology	people with mobility impairment	29 min	owned social media page
Rubik's Cube Competitions	education, social inclusion	youngsters, young adults	36 min	owned social media page
Cashback Donations, Support Packages	support for charity events	social fundraisers, companies	47 min	owned social media page, website
Eco-friendly Reed Bags and Traditional Carpets	unemployment, cultural preservation, environment	rural women, ethnic minorities	70 min	owned social media page
Comics Studio	environmental awareness, social inclusion	youngsters, young adults	42 min	owned social media page
Traditional Socks	unemployment, cultural preservation	rural women, ethnic minorities	44 min	owned social media page, website
Digital Support Platform	education and finance	social event and enterprises	49 min	owned social media page, website
Eco-friendly Reed Bags and Traditional Carpets	unemployment, cultural preservation, environment	rural women, ethnic minorities	63 min	owned social media page

Source: author.

In the detailed coding process, we summarize multiple cases and in-depth face-to-face interviews which present keywords and codes which are necessary for the qualitative analysis. After qualitatively analyzing the summaries of interview transcripts, the first coding stage shows generic and real findings regarding the connection between social entrepreneurship, digital transformation, and value co-creation. At the first coding stage, some of the most frequently



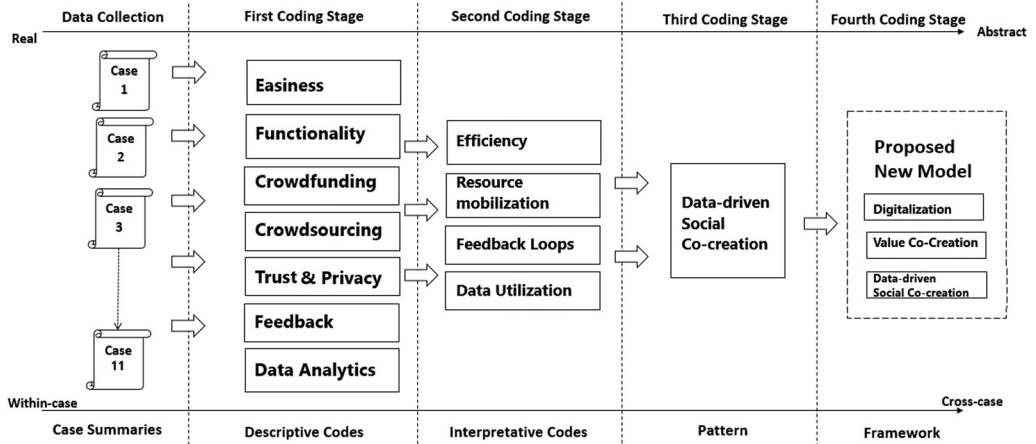


Fig. 1. Data analysis process for Multiple case studies in Social Entrepreneurship
 Source: adapted from Saldana (2015) and Frau et al. (2022).

stated keywords are the basis of descriptive codes (easiness, functionality, crowdfunding, crowd-sourcing, trust & privacy, feedback, data analytics).

Since there is a gap between the three strands of literature, the next coding stages try to synthesize available knowledge and generic keywords and codes into more abstract and summarizing codes. For example, at the second coding stage, they make up new interpretative codes such as efficiency, resource mobilization, feedback loops and data utilization (Fig. 1). Previous codes of easiness and functionality can be combined under the theoretical code of **efficiency**. This theoretical code represents how digital tools and platforms aim to streamline processes and make operations more effective and efficient both for social enterprises, their customers and collaborators in the value co-creation processes. Previous codes of crowdfunding and crowd-sourcing can be linked under the code of **resource mobilization**. These raw codes reflect the ways in which social entrepreneurs leverage collective resources and contributions from the crowd to support their initiatives, which aligns with the broader concept of resource mobilization in social enterprises. Feedback, trust and privacy raw codes can be associated with **feedback loops**. Trust and privacy concerns often influence the feedback mechanisms within digital platforms. Feedback loops involve the continuous exchange of feedback between users and the platform, which can help to build trust, and address privacy concerns through open communication and responsiveness. Data analytics naturally fits in with **data utilization**. Data analytics involves the collection, analysis, and interpretation of data to extract meaningful insights and inform decision-making as well as value co-creation processes. Data utilization encompasses a broader concept of how organizations effectively use data to drive innovation, inform strategies, and optimize performance. By connecting these raw codes with more theoretical ones, we can develop a deeper understanding of underlying mechanisms and dynamics within the context of social entrepreneurship. This enables researchers to explore and analyze these concepts in a more comprehensive manner, contributing to advancement of theoretical frameworks and practical applications in the field.



Finally, the four theoretical codes of Efficiency, Resource Mobilization, Feedback Loops and Data Utilization led to the new code of data-driven social co-creation at the third coding stage and contributed to the final proposed conceptual model at the fourth coding stage.

4. FINDINGS

4.1. Detailed coding process

First, digitalization's advantages such as its easiness, functionality, saving time and financial costs are combined under one code of **efficiency**. Efficiency or digital efficiency in this context, can be defined as the effectiveness and optimization of digital processes, technologies, and systems in achieving desired results with minimal resources and waste. According to our data analysis, digitalization is impacting on value co-creation in social entrepreneurship by contributing to the overall product quality, saving time and costs. Other than easiness and high speed of the work process, digital efficiency is reflected in finance-related activities such as easy sales, easy money transfer and easy means of purchasing, as stated by the co-founder of a social enterprise selling comics (Case 1, Table 2). Functionality under the efficiency code is also worth mentioning, according to our data analysis. We revealed that digitalization brings functionality, a "snowball effect" of fast growth (Case 8) and better targeting as stated by founder of an enterprise selling socks made by rural women (Case 9).

Second, crowdfunding, crowdsourcing, and their integral base – trust and privacy combined under the code of **resource mobilization**. Resource mobilization can be defined as the process of acquiring and gathering necessary assets, including financial, human and material resources, to support and implement a particular project, initiative or enterprise. We revealed that crowdfunding was another keyword used by the interviewees. One informant from an enterprise selling handcraft products, talks about digitalization and value co-creation for crowdfunding, easy money transfer and financial transparency (Case 3, Table 2). We have found that trust and privacy are crucial parts of digital payments as well as crowdfunding and social fundraising (Case 6, Table 2). When it comes to crowdsourcing, the founder of social enterprises selling adaptive clothes, fashion shows for disabled people and digital accessibility maps, states that crowdsourcing allows users to submit the data, create new value with the information together with the social enterprise or civil society and then with the government itself (Case 4, Table 2). Informants from the support platform, handcrafts and comics studios, also talk about crowdsourcing mainly when asked about value co-creation (Case 10, 3, 1). The founder of the digital support platform mentions it as a way of widening resources, to have platform to share resources other than financial resources, including venue support, expertise support, and networking (Case 10, Table 2).

Third, feedback-related themes such as the feedback-based product and service development are gathered under the code of **feedback loops**. Feedback loops can be defined as the utilization of digital platforms for gathering continuous feedback from stakeholders, by incorporating it with product development, service improvement, and decision-making. According to our analysis, we revealed the importance of digitalization for value co-creation in social enterprises by "*cooperating with focus groups for feedback and needs assessment*" as it has been stated by the co-founder of a comics studio (Case 8). We found feedback-based product or service development as a common practice in many social enterprises. For example, an entrepreneur selling vegan



Table 2. Summary of identified concepts

Concept	Definition	Illustrative quotes
Efficiency	Effectiveness of digital technologies in achieving the desired results with minimum resources and waste	“Overall management of the business is easier because of digital means of purchasing. One can pay digitally through Google Pay and PayPal. These make it easier to collaborate with customers.” Co-founder, Case 1.
		“Less time and energy are going”. Founder, Case 2.
		“We can deliver our products to the regions, and also to abroad”. Co-founder, Case 3.
		“It makes easier for us to announce, clients to register for competitions, easier for promoting our events and accessing a wide audience. It saves time, we group competitors in a second, reach more audience, grow faster in a cost-effective way”. Co-founder, Case 5.
		“Of course, you can do it in one day, be an international organization. So, we can make cross-border donations. It helps us to involve more people. Operational expenses and risks with [...] an old fashioned cashback system is much higher than using an application.” Founder, Case 6.
		“From the perspective of digitalization, more people know what’s happening in the community. We are promoting awareness, selling online, you can do it easily. You fully commodify everything, commodify the sensitive issue. Our website used to be only informational in the first years and then they made it more functional for online sales.” Co-founder, Case 11.
		“With value co-creation and digitalization, companies can offer many new side products or services, there can be more growth, fast entry to market, faster import and production.” Founder, Case 10.
Resource mobilization	Process of gathering the required financial, social and material resources to sustain an enterprise	“Digital crowdfunding platforms such as Patreon, Kickstarter or local Tokhum can allow us to raise funds and engage a community of backers who share our vision and actively contribute to our success.” Co-founder, Case 3.
		“Because with crowdfunding, they’re just believing you that it’s good for testing your product and idea. It means they’re contributing some amount of money. Since they believe, it’ll be a good idea and product.” Co-founder, Case 7.

(continued)

Table 2. Continued

Concept	Definition	Illustrative quotes
		<p>“Simple, useful and good for all: anybody in the world can use, donate to social fundraising inside the application, or create his or her own social campaign. [...] In our case, privacy is very clear as here. Yeah, by sitting at home without going to an ATM. So, this is a privacy and good service for users, for fundraisers. Also, it's easy. It's very convenient to create those campaigns in our system... So, if a merchant is on site, he should use our app to recognize the client, it's very easy, you can recognize, identify the client by reading QR. If you're online, you can use our application and users use their own unique number, and if you are e-commerce, in that case there is no need for application, just from merchant side, from user side you have to use the application: in that case, you go to our application, find proper merchant and do all shopping online, and referral system is working there, so, the system understands that by whom you were referred.” Founder, Case 6.</p> <p>“So, this is kind of a place, a bridge between the citizens, the governments and the authority. In that sense digital innovation is creating new values and bringing these two separate groups that wouldn't really come together to fix this problem. Basically, we don't come up with the designs on our own. We don't think for ourselves: What? Which kind of clothing do we need to design? Rather, it is the models who are going to be wearing the clothing on the stage that get to explain their needs and show us what kind of clothing they would be much better in. Then they get to work with them to design specifically that what they need. That's another track of creating value together with customers.” Founder, Case 4.</p> <p>“I knew that it'd be an online platform, otherwise it wouldn't work. So, digitalization is very special in our case. Also, crowdfunding is mainly from physical individuals and with the new enterprise I wanted to bring corporative companies too and have crowdsourcing other than crowdfunding to widen resources. If you are a company, you are not using the office at the weekends, and you can give your venue to social enterprises. Or another example is being a trainer or mentor and sharing your expertise. Or if you are not an expert, you can be a volunteer. So, my point is that support is not only financial. And the reason why we started online was the ease of doing all these.” Founder, Case 10.</p>

(continued)



Table 2. Continued

Concept	Definition	Illustrative quotes
Feedback loops	Utilization of digitalization for continuous feedback from stakeholders, by incorporating it with product and service development	“So, based on this feedback from our customers, it also changed our stereotypes about product design. The more feedback you get, you actually understand that of course you can have some trends in the local market, but you can also change some perspectives about your products as well. So, digitalization’s main unique point and value for us is an opportunity to get reactions from and interact with all possible stakeholders. Constant feedback is good for testing, experimenting, and continuously adjusting to the needs of different stakeholders and satisfying their needs by accepting reality after testing with focus groups or with the clients.” Founder, Case 2.
		“Digitalization also provides statistical numbers or statistical feedback in numbers.” Co-founder, Case 8.
		“Client satisfaction is very important, because we believe in the power of mouth-to-mouth marketing, and the happiness of clients brings more people. With feedback, they are shaping even our video content.” Co-founder, Case 11.
		“Balance of keeping our roots, of making the traditional socks, but also taking people’s own needs, orders. This is more sustainable to continue.” Founder, Case 9.
Data Utilization	Process of extracting meaningful insights and value from data through analysis, interpretation, and application	“People need skills and knowledge to use technology to create something digitally and do the marketing because it is generally very competitive”. Co-founder, Case 1.
		“How to actively use, promote, sell something... You know, it was hard for workers to promote, since rural regions have lower internet speed, tech adoption and elderly women in those regions have lower digital skills to commodify their products and culture online. It is to keep the competition in digitalization, because we always have to keep on proving our digital skills. Nowadays many companies offer high tech and everything can be done with one click. So, it’s also hard to be in the competition here.” Co-founder, Case 7.
		“Leveraging data analytics tools, social entrepreneurs can analyze trends, measure impact, and make data-driven decisions to improve their initiatives’ effectiveness.” Co-founder, Case 3.
		“In this social enterprise we are collecting data for better and accessible buildings for people with disabilities.” Founder, Case 4.

Source: Own compilation.



sweets, previously did not have minimalistic and vegan products, but then had to include these on the menu (Case 2, Table 2). An informant from an enterprise serving youngsters from unprivileged backgrounds mentions gathering feedback on customer expectations and value co-creation. He states the importance of open communication and needs assessments with focus groups. “Well, our competitions are mainly based on the value co-creation.” Because in the service that they provide, clients are a crucial part of the service, they are also serving and creating value together. In this regard, feedback is essential. Knowledge management at the managerial level, collaboration of managers and collaboration with customers are also related things and mentioned by him for feedback and addressing client needs (Case 5). Active listening, electronic word of mouth, quality assurance, feedback from focus groups and keeping up with the clients’ expectations have also been mentioned frequently by respondents and gathered under the feedback loops code.

Fourth, digitalization’s components such as tech adoption, digital skills and data analytics are combined under one code of **data utilization**. This can be defined as the process of extracting and using meaningful insights, knowledge, or value from data through analysis, interpretation, and application. According to our qualitative analysis, we have observed that the lack of data collection in social enterprises, especially in the first years is common, however, they must satisfy their clients with unique extra valuable products, because as one respondent mentions “*after all, sales are not only sales, but a huge part of building trustable long-term relationship*” (Case 2). With this, the importance of data analytics, online surveys and data utilization in general was revealed once again. The data analytics and insights side of digitalization for value co-creation also have been mentioned by the co-founder social entrepreneur of a comics studio (Case 3, Table 2). Lastly, the statistics part of data analytics also has been mentioned by the founder of a social enterprise using data-driven map technologies (Case 4, Table 2). It was repeated in feedback loops since they are similar and related concepts.

4.2. Proposed conceptual framework

First, efficiency often involves optimizing resource allocation and utilization to achieve maximum output. However, resource mobilization focuses on gathering and leveraging resources effectively to support organizational goals. In the context of social entrepreneurship, these two concepts can be intertwined to emphasize the importance of efficiently mobilizing resources, including human, financial and technological resources, to empower operational effectiveness and efficiency.

Second, feedback loops involve the continuous exchange of information and feedback between stakeholders, allowing social enterprises to gather insights, assess performance, and adapt strategies accordingly. Data utilization entails the collection, analysis, and interpretation of data to inform decision-making, drive innovation and value co-creation. These two concepts intersect in the context of leveraging feedback data to inform data-driven decision-making processes, enabling organizations to refine their strategies, products or services based on real-time insights and feedback from stakeholders.

Our main research question of how digitalization enables value co-creation for social entrepreneurship development can be answered with data-driven social co-creation. Digital transformation enables value co-creation in social enterprises through data-driven social co-creation. This new term can be defined as analyzing data to identify trends, preferences, and areas for



improvement via continuous feedback and using data insights to co-create tailored solutions that address specific stakeholder needs in social entrepreneurship and contribute to the solution of social or ecological problems.

As an illustrative quote, we can mention that everything starts from entrepreneurial intention, goal, and mindset. As the founder of a social enterprise selling vegan sweets made by disabled women puts it:

“You know when you are having the right mindset for doing this work, nothing will stop you. You will not see some challenges in digitalization or value co-creation when you are accepting reality as it is. For example, the biggest organizations, the United Nations, are using something else for sustainability of local communities. They don’t ask opinions from local beneficiaries about their lifestyle, problems and real needs. They can use some digital tools, but it will not be effective. So, digitalization is great, but it should be tailored to any specific context and audience. When you are using digitalization for the wrong audience, your resources will be wasted for nothing. So, that’s why for sustainability and then based on the data we got from the value creation process, from understanding the needs of our customers or beneficiaries, from understanding the local context - only in this case we can think about digitalization.”

Therefore, by integrating the codes of efficiency, resource mobilization, feedback loops and data utilization, we can develop the new theoretical concept of data-driven social co-creation, which brings digitalization, social entrepreneurship and value co-creation together, and emphasizes integration of data-driven decision-making processes with value co-creation initiatives in social entrepreneurship (Figs 2 and 3). This concept underlines the importance of utilizing data and feedback to co-create value with stakeholders, ultimately enhancing social entrepreneurial performance and impact to solve social problems. We can also interpret data-driven social co-creation as a bridge between digitalization.

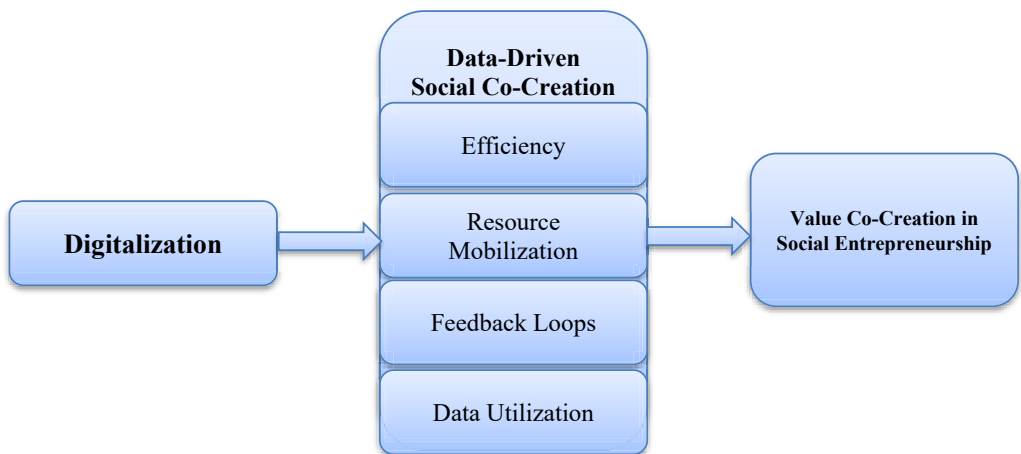


Fig. 2. DSC framework depicting mechanisms connecting digitalization and value co-creation for social entrepreneurship’s improvement

Source: author.



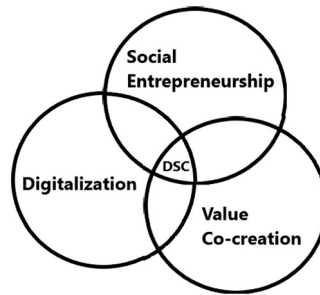


Fig. 3. Data-driven social co-creation as a gap-filler and connection between digitalization, social entrepreneurship and value co-creation

Source: author.

5. DISCUSSION OF FINDINGS

5.1. Theoretical contributions

To meet the research objective and to explore the underlying theoretical mechanisms that tie digitalization and value co-creation together for social entrepreneurship's improvement, a multiple case study methodology was implemented (Section 3). A comprehensive analysis of 11 face-to-face in-depth interviews was conducted to address key research question of "How does digitalization enable value co-creation for social entrepreneurship?", and a detailed coding process was created (Section 4.1). This research extends previous studies in the social entrepreneurship literature by proposing the theoretical framework of data-driven social co-creation (Fig. 2).

Social enterprises are impacted by digitalization (Aisaiti et al. 2019; Goyal et al. 2021; Wan – Liu 2021), and value co-creation (Yáñez-Valdés et al. 2023; Ratten 2022), yet digitalization's impact on value co-creation for social entrepreneurship is underexplored and practically, there is still need for social entrepreneurship to increase its use of digitalization to co-create value. Our research has identified themes enabling digitalization for value co-creation in social entrepreneurship: efficiency, resource mobilization, feedback loops, data utilization, or in one word – new phenomenon of data-driven social co-creation.

Furthermore, our research revealed that the relationship between digitalization, value co-creation and social enterprises is disjointed and very scarce in the literature. Therefore, the literature on social entrepreneurship has largely failed in its purpose of synthesizing and providing guidance to social entrepreneurs on the implementation of value co-creation, and digitalization, which is surprising due to the large amount of research on these topics.

Our research adds to the literature by eliminating the research gap, proposing a conceptual framework, and depicting the research agenda for future endeavors. The DSC framework showing mechanisms connecting digital transformation and value co-creation for social entrepreneurship's improvement (Fig. 2) is a theoretical contribution of this article. The connection between digitalization and value co-creation for social entrepreneurship's development was not explicitly and empirically investigated before. The DSC framework resolves inconsistencies and contributes to existing knowledge base regarding digitalization, value co-creation and social entrepreneurship literature streams.



5.2. Managerial implications

Data-driven social co-creation, a phenomenon where digitalization enables social entrepreneurs to leverage efficiency, resource mobilization, feedback loops and data utilization to efficiently, wisely and collaboratively create value with different interested parties, involves digital transformation to collect, analyze and interpret data from various sources, including customer feedback, market trends and social impact metrics. In DSC, social enterprises harness their stakeholders' power, identify innovation opportunities, and tailor their services or products accordingly. By integrating data-driven insights into their co-creation processes, social entrepreneurs can empower relevance, effectiveness and sustainability of their initiatives, ultimately driving positive social impact in their communities. This phenomenon highlights the transformative potential of digitalization in social entrepreneurship, highlighting the vitality of data-driven decision-making and collaboration in addressing complex social challenges. Through DSC, social enterprises can unlock opportunities for innovation, partnership and positive change creating value extending far behind traditional business metrics.

Lastly, to enhance discussion on indicators to measure digitalization's impact, we created a table for assessing the outcomes of digital strategies in tangible terms to provide practitioners with clearer guidelines on evaluating their initiatives (Table 3).

Table 3 specifically highlights the question of what is the tangible effect on unprivileged communities. Since digital literacy and access among stakeholders, particularly in marginalized communities are at different levels, we thought discussing the above-mentioned strategies to overcome these barriers would strengthen the practical application of the DSC framework, especially in regions with low digitalization.

5.3. Limitations and future research

This research provides chance to explore how social enterprises can enhance their digital capabilities while co-creating value with their respective communities. However, this research also depicts some limitations, which should be addressed in future research.

Methodologically, our reliance on the case study approach restricts the generalizability of our findings. Nevertheless, since the concept of data-driven social co-creation relates to social entrepreneurship broadly, it could potentially be extended from Azerbaijan to other European social enterprises and even traditional businesses as well. Therefore, we recommend expanding the investigation to other firms in various industries interacting with digitalization and value co-creation.

Furthermore, as a newly proposed concept, data-driven social co-creation could benefit from quantitative validation and testing. Future studies could develop measurement scales for DSC and validate survey instruments to assess this capability rigorously. Such endeavors would enable researchers to conduct explanatory research, test casual relationships and explore the topic across diverse organizational contexts. Additionally, further research could delve into the mechanisms and relationships within the DSC framework to enhance theoretical understanding of it. This could involve quantitative testing of propositions regarding interplay between different constructs such as efficiency, resource mobilization, feedback loops or data utilization. Validating the network of DSC could empower its theoretical foundations and evaluate its predictive capacity.

The existing body of research on social entrepreneurship lacks applicability across diverse contexts and fails to sufficiently explore the interplay between digitalization, value co-creation



Table 3. Digital strategy assessment

Assessment criteria	Guiding questions	Indicators or metrics	Data sources
Clarity of social entrepreneurial goals	What is specific aim of the social enterprise's digital strategy?	Clearly defined business goals	Stakeholder interviews, strategy documents
Levels of engagement and motivation for value co-creation	How engaged are customers and collaborators?	Participation frequency, users' activity rate	Surveys, social media application's own analytical tools
Effectiveness of collaboration	How efficiently are stakeholders contributing to VCC?	Quality input, number of contributions and joint project over time	Feedback forms, platform indicators, collaboration tools.
Measurement of the impact	What is the tangible effect on unprivileged communities?	Social impact metrics, number of lives improved	Testimonials of community members, impact assessments
Learning outcomes	What new learning has been generated via value co-creation?	Number of resources created, training sessions	Customer feedback, resource drive folders or libraries
Sustainability of social initiatives	Are the social and ecological initiatives long-lasting?	Profit stability, frequency of repeated initiatives	Financial reports, engagement metrics
Innovation and agility	How agile are the digital strategies to the changing needs in the market and community?	Number of new initiatives and number of adaptations made	Stakeholder feedback, customer data, review meetings

Source: author.

and social entrepreneurship. To bridge this discrepancy between theoretical insights and practical realities, there is a pressing need for a research agenda delving into themes outlined in this section. Another recommendation for advancing research on correlation between digitalization, value co-creation and social entrepreneurship involves examining the subject through the lens of additional conventional marketing and business topics, such as market turbulence and crisis. Additionally, since our research did not cover digitalization's impact on value co-creation for social entrepreneurship during crisis other than COVID-19. However, due to its great potential, we argue that this could be a future research direction as well, focusing on the Karabakh conflict, Russia's invasion of Ukraine, or the energy.

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