

Delivering societal impact through supply chain design: insights from B Corps

Delivering
societal impact
through SCD

Eugenia Rosca

University of Groningen, Groningen, The Netherlands, and

Kelsey M. Taylor

Asper School of Business, University of Manitoba, Winnipeg, Canada

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Abstract

Purpose – This paper examines how different configurations of societal impact are pursued by purpose-driven organizations (PDOs) and how these configurations align with the application of varying supply chain design (SCD) practices.

Design/methodology/approach – This multi-method study uses quantitative data from 1588 B Corps and qualitative data from 316 B Corps to examine how PDOs align SCD with the pursuit of diverse types of societal impact. The authors first conduct a cluster analysis to group organizations based on the impact they create. Second, qualitative content analysis connects impact with enabling SCD elements.

Findings – The analysis of the five identified clusters provides detailed empirical insights on influencers, design decisions and building blocks adopted by PDOs to drive a range of societal impacts. Specifically, the nature of the impact pursued affects (1) whether a PDO will be more influenced by a need in the political environment or an opportunity in the industry environment, (2) the relative importance of the design of social flows versus material flows and (3) the need to develop new relational resources with beneficiaries versus leveraging existing capabilities to manage inter-firm processes.

Originality/value – This study responds to calls to disaggregate different dimensions of societal impact and examines the relationship between SCD and a breadth of sustainability impacts for different stakeholders. In doing so, the authors identify four SCD pathways organizations can follow to achieve specific societal impacts. This study is also the first to employ a supply chain perspective in the study of certified B Corps.

Keywords Supply chain design, Sustainable supply chains, Social impact supply chains, Cluster analysis, B Corps

Paper type Research paper

Introduction

There is growing evidence that pursuing sustainability requires the adoption of holistic approaches that incorporate both internal (i.e. towards workers) and external impacts (i.e. toward consumers, community and the natural environment) and consider the needs of a wide range of stakeholders (Montabon *et al.*, 2016). Supply chain design (SCD) has the power to influence a range of sustainability outcomes, but the existing literature has focused on economic and environmental dimensions, excluding more holistic approaches to sustainability (Bals and

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Tate, 2018; Wu and Pagell, 2011). Disaggregating different dimensions of impact can facilitate a better understanding of trade-offs associated with sustainability and unpack unique characteristics and attributes connected to its various forms (Wang *et al.*, 2016).

One group of organizations that are more advanced in their pursuit of sustainability and are known to pursue a more holistic approach to impact are purpose-driven organizations (PDOs). PDOs are enterprises with a clear mission regarding social or environmental issues motivating their commercial activities. These organizations differ from traditional profit-oriented firms by engaging in economic and non-economic activities and committing to creating social and environmental impact (Doherty *et al.*, 2014). The emerging field of social impact supply chain management (SISCM) examines the supply chains of enterprises pursuing both social welfare and commercial goals (Pullman *et al.*, 2018). Extant literature in this research area indicates that these supply chains operate differently from conventional organizations (e.g. Bals and Tate, 2018; Longoni *et al.*, 2019; Taylor and Rosca, 2022). However, little is known on how these organizations can tailor their SCD to create different impacts.

The study employs certified B Corps as a sample of PDOs. B Corps are “*businesses that meet the highest standards of verified social and environmental performance, public transparency, and legal accountability to balance profit and purpose*,” based on a certification scheme developed by the non-profit organization B Lab (B Lab, 2020). B Corps have been employed in previous studies as an example of PDOs (e.g. Gamble *et al.*, 2020; Sharma *et al.*, 2018; Stubbs, 2017). Studying them can provide valuable insights for conventional firms who may wish to increase their impact. This study aims to advance the understanding of how SCD aligns with different forms of societal impact, adopting a multi-method approach combining qualitative and quantitative secondary data on certified B Corps to answer two research questions. First, which configurations of societal impacts are pursued by PDOs? Second, how do these impact configurations relate to PDOs’ application of different SCD practices?

To address the first research question, we conduct a cluster analysis of certified B Corps using their performance across the five impact areas captured by the B Corp evaluation tool (i.e. *Customers, Community, Workers, Environment and Governance*) to better understand the characteristics of organizations pursuing specific types of impact(s). The most representative firms in each cluster are then scrutinized using in-depth content analysis to identify SCD decisions linked to their unique impact, in pursuit of the second research question.

The findings uncover vital influencers, design decisions and building blocks linked with different forms of impact created by PDOs. First, different types of impact require attention to distinct cues of need or opportunity in the political or industry environment. Second, the kind of impact pursued determines the importance of the design of social flows versus material flows. Third, the chosen impact determines whether key building blocks take the form of new relational resources PDOs need to develop with beneficiaries, existing capabilities PDOs need to leverage to manage inter-firm processes, or investments in technologies to enable impact creation. Our insights contribute to the emerging literature on SISCM and uncover how SCD practices can be aligned with disaggregated forms of societal impact based on the analysis of B Corps as a sample of PDOs.

Supply chain design and social impact supply chain management

Two streams of literature guide this study: SCD in traditional firms and SISCM. SCD aims to ensure its broad structures suit its ultimate purpose. To examine SCD, we employ the framework created by Melnyk *et al.* (2014). This framework identifies three factors — influencers, design decisions and building blocks — that are most important in shaping SCD. It is an intuitive way to understand managers’ decisions in forming their supply chains. Table 1 presents definitions of these three SCD dimensions, analytical constructs relevant for each dimension and examples of their application in the traditional supply chain and social impact supply chain (SISC) literature.

Related concepts*	Examples from traditional supply chain literature	Examples from social impact supply chain literature
Influencers* - Broad environmental factors that constrain and influence the resulting supply chain		
Desired outcomes	A firm's ability to access resources influences its capacity for experimentation within the market, which may be important for innovative products (Golicic and Sebastiao, 2011) Firms with higher mindfulness are more likely to invest in supply chain design elements including process management, information sharing, supply chain partner security management and service provider management (Speier <i>et al.</i> , 2011)	Addressing a highly pressing social issue thereby creating social welfare for beneficiaries (Pullman <i>et al.</i> , 2018) Values of owners/managers can be an important driver of supply chain formation (Pullman and Dillard, 2010)
Industry conditions	Market priorities guide the selection of competitive priorities and subsequently, supply chain design (Sharifi <i>et al.</i> , 2013)	Volatility in prices of raw materials can dramatically affect viability of base of the pyramid business models (Reiner <i>et al.</i> , 2015)
Political environment	In global supply chains, individual countries and their regulatory environments can create competitive advantage in the production of a good (Lee and Wilhelm, 2010)	Regulatory barriers, poorly functioning markets, and capabilities of primary supply chain actors all drive supply chain adjustments in emerging markets (Lorentz <i>et al.</i> , 2013)
Design decisions* - Decisions regarding the structure and design of the supply chain		
Social network design	Supply chain relationships can enhance legitimacy and help firms access key customers (Golicic and Sebastiao, 2011) Product development and supply chain management decisions should be closely integrated to reduce uncertainty and enhance performance (Noori and Georgescu, 2008)	Diverse institutional logics among supply chain partners will affect supply chain management (Longoni <i>et al.</i> , 2019) Establishing relationships with secondary stakeholders can help firms create additional social and ecological value in their supply chains (Rodriguez <i>et al.</i> , 2016)
Physical network design	Geographic proximity with supply chain partners enables intensive and on-going collaboration (Golicic and Sebastiao, 2011) Dense supply networks have lower transaction costs, improved information sharing, while supply networks with holes increase access to innovative information (Autry and Griffis, 2008)	Organizations must decide whether to separate or integrate social and commercial supply chains (Pullman <i>et al.</i> , 2018) Organizations may choose to integrate intermediaries throughout the supply chain (Varga and Rosca, 2019)
Sourcing strategies	Local sourcing or in-sourcing reduce the risk and cost of supply chain disruptions (Inman and Blumenfeld, 2014)	Raw materials may be imported into emerging economies temporarily while local markets are being developed (Lorentz <i>et al.</i> , 2013)
Building blocks* - Investments needed for supply chain implementation and operations		
Social capital	Strong supply chain relationships support execution-oriented performance, while weak ties support innovation (Autry and Griffis, 2008) Deeply embedded supply chain relationships enhance firm survival (Golicic and Sebastiao, 2011)	Changing the current economic system requires more power and equity for communities to protect their interests (Berry, 2003) Altruism and trust can help organizations accept institutional tensions in social impact supply chains (Longoni <i>et al.</i> , 2019)
(continued)		

Table 1.
Supply chain design
elements: Influencers,
design decisions,
building blocks

Related concepts*	Examples from traditional supply chain literature	Examples from social impact supply chain literature
Inter-firm processes	Information sharing and monitoring capabilities reduce severity of supply chain disruptions (Craighead <i>et al.</i> , 2007)	Involvement of non-business actors can help facilitate collaborations between businesses to address large scale societal issues (Benstead <i>et al.</i> , 2018)
Intra-firm processes	Lean adoption without appropriate HR and prevention practices can harm worker safety (Longoni <i>et al.</i> , 2013)	Social enterprises adopt forgiving absence policies to reduce barriers to beneficiary participation (Taylor and Rosca, 2022)
Financial resources	Financial slack mitigates harms of reducing operational slack (Wiengarten <i>et al.</i> , 2017)	Social enterprises employ payment terms that benefit beneficiary suppliers to enable their participation in the supply chain (Taylor and Rosca, 2022)
Technology	Manufacturing efficiency and effectiveness is supported by the adoption of RFID technologies (Zelbst <i>et al.</i> , 2012)	Adoption of greener technologies are an important causal factor supporting the adoption of sustainable supply chain management (Choudhary <i>et al.</i> , 2020)
Note(s): *The related concepts and the definitions for influencers, design decisions and building blocks are based on (Melnyk <i>et al.</i> , 2014)		
Source(s): Authors' own creation		

Table 1.

SISCM research distinguishes itself by focusing on supply chains where the focal actor is a PDO. As such, SISCM goes beyond traditional supply chain management by providing a framework in which commercial objectives are combined with social objectives (Pullman *et al.*, 2018). Table 1 illustrates how the nature of operations and supply chains differ in these organizations relative to traditional supply chains.

SISCs are influenced by their uncertain institutional environments (Parmigiani and Rivera-Santos, 2015; Lorentz *et al.*, 2013) and the challenging characteristics of their target customer markets (Hall and Matos, 2010; London *et al.*, 2010). Their design decisions center on integrating the commercial and the social welfare supply chains, which drive both the structure of the social and physical network and sourcing strategies adopted by the PDO (Pullman *et al.*, 2018). Social network design and partner selection within and beyond the supply chain is essential to broaden the scope of value creation, access various inputs and maximize support from a broad base of actors in SISCM (Bals and Tate, 2018) and manage conflicting stakeholder expectations (Longoni *et al.*, 2019). Companies may engage with non-traditional partners with a strong social orientation who can push organizations toward their mission (Rosca and Bendul, 2019) or help to create additional social and environmental impact (Rodríguez *et al.*, 2016). Finally, a holistic approach to sustainability requires investments in social capital (Longoni *et al.*, 2019; Taylor and Rosca, 2022) and capabilities for managing social innovation and supply chain monitoring (Tate and Bals, 2018; Klassen and Vereecke, 2012). Financial slack may be required to develop supply chains to support underserved beneficiaries (Taylor and Rosca, 2022) and to enable investments in new technologies to facilitate environmental impact across the supply chain (Choudhary *et al.*, 2020).

There is currently little knowledge regarding how SCD decisions can be aligned with the pursuit of different forms of impact. Disaggregating different types of impacts can help provide a more nuanced understanding of how SCD can support this goal. This study investigates the link between a PDO's SCD and impacts to generate actionable insights and enable movement toward a holistic approach to sustainability.

Research design

This study adopts a multi-method approach using secondary data on B-Corps to execute a cluster analysis and a qualitative content analysis. As the study of SCD for PDOs is in a nascent stage, this exploratory analysis aims to identify emerging patterns and evidence of constructs and lay out a set of issues which can be investigated by future research (Edmondson and McManus, 2007). An exploratory cluster analysis focused on different forms of impact enables the formation of groups of firms which excel in the same impact area or group of impact areas.

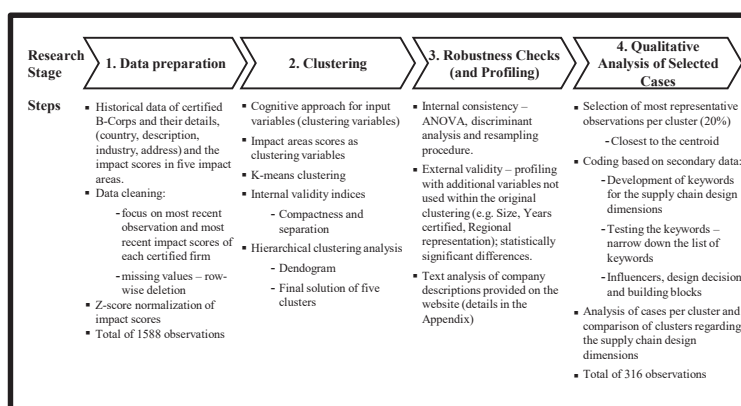
For this purpose, a multi-method approach is adopted. First, a quantitative cluster analysis is conducted, and post-hoc techniques are used to profile the identified clusters. Second, qualitative content analysis is performed on the most representative firms in each cluster to gain a more nuanced view of the associated SCD elements. Combining these methods can highlight connections between forms of impact and specific design practices employed by these PDOs.

Quantitative cluster analysis

The cluster analysis is conducted in several stages (see Figure 1). First, available data on B Corps compiled and made public [1] by B Lab are collected and prepared for analysis. Second, clustering algorithms are employed to explore the data structure and categorize each organization based on the type(s) of impact created. Third, robustness checks are conducted to examine the cluster solution's internal consistency and external validity.

Data collection and preparation

This study is based on the historical impact assessment data of all companies that have received a B Corp Certification since the certification system launched. B Corp certification is awarded based on an application procedure which includes the completion of a detailed impact assessment. The assessment consists of 50–200 questions measuring a company's impact across five areas: *Customers, Community, Workers, Environment and Governance*. A company must receive at least 80 points out of 200 across all impact areas to earn certification, among other requirements (see Appendix 1 for more details on the assessment and certification process).



Source(s): Authors own creation

Figure 1.
Overview of the
research design

Sampling approach

To ensure that the K-means analysis is not biased towards companies with multiple observations over time, observations are equally weighted by selecting the most recent observation of each certified company. Subsequently, observations are removed if they are missing data from any impact area or are from a company that has decertified. This results in 1588 firm years from an initial sample of 6232. Finally, observations are Z-score normalized, so differences reflect relative instead of absolute values (Brusco *et al.*, 2017).

Cluster analysis

The input variables for the cluster analysis were the five impact area scores provided for each observation. Thus, it can be interpreted as following a *cognitive approach*; they are based on industry expertise and assist in exploring the network of impact-minded companies to uncover the underlying structure (Ketchen and Shook, 1996). A k-means clustering approach is adopted in this study. The k-means algorithm is suitable due to the shape and particularities of the data (e.g. no clear separation of clusters). Several internal validity indices are considered to limit the arbitrariness inherent to partitioning clustering methods, and a hierarchical clustering analysis is conducted.

Internal cluster validation relies on the information in the data and deduces the number of clusters based on the compactness and separation of the resulting clusters (Liu *et al.*, 2010). The commonly used Calinski-Harabasz index [2] suggests using two cluster centers, closely followed by an optimal choice of five centers. The Hubert index and S_Dbw statistic suggest five clusters. Experimental evidence by Liu *et al.* (2010) suggests that the S_Dbw [3] is a more encompassing method since it also examines cluster density.

Second, a hierarchical clustering approach is used to assess the sensibility of five clusters visually. A dendrogram confirmed that five clusters are appropriate for the data. With five centers as the best fit to the data, the k-means algorithm is implemented. To ensure that the resulting partition of the data is a global optimum, the analysis is repeated 5000 times with random starting values and the most common partition is selected. Several checks are then employed to examine internal consistency and external validity following practices from Mair *et al.* (2012) and Brusco *et al.* (2017). In brief, all robustness checks indicate that the solution approach is robust and consistent (for more details on all robustness and post-hoc tests, please check Appendix 2).

To understand how these clusters aligned with impact area performance, pairwise ANOVAs are conducted. The mean overall and impact area scores for each cluster are provided in Table 2. This table identifies where the ANOVA specified that a cluster significantly outperformed all other clusters in a particular impact area. The table also indicates that these clusters do not all correspond with a single impact area. For example, Cluster 4 excels in several impact areas, while Cluster 3 does not outperform any other clusters in any single impact area. On these grounds, we aligned each cluster with a specific impact area or a combination of impact areas. In alignment with other studies conducting cluster analysis, we provided illustrative names for each cluster to quickly reflect the core characteristics that emerged from the analysis (e.g. Mair *et al.*, 2012).

Qualitative analysis

A selection of the most representative observations in each cluster is then further explored in-depth through additional data collection and analysis. Due to significant differences in cluster sizes, a percentage threshold is employed. Across all five clusters, the selection of the closest 20% of firms to the centroid leads to a total sample of 316 organizations profiled. A random sample of 80 firms is then coded by two researchers,

Clusters	Impact areas				
	Community	Customers	Environment	Governance	Workers
1 Community Champions (n = 232)	<i>43.00</i>	12.03	9.61	13.12	22.90
2 Environmentalists (n = 235)	24.55	8.60	<i>31.25</i>	11.93	22.14
3 Customer Impact Improvers (n = 401)	23.68	17.91*	8.72	9.61	<i>27.40*</i>
4 Internal Impact (n = 415)	23.77	13.48	8.71	<i>16.47</i>	<i>31.23</i>
5 Customer Access Improvers (n = 305)	22.39	<i>39.67</i>	6.82	14.29	23.24

Note(s): Italic scores are those in which that cluster performs significantly better than all other clusters based on pairwise ANOVA. *Cluster 3 was not the best performer in any individual impact area but performed significantly better than all clusters except 5 in the Customers impact area, and better than all clusters except 4 in the Workers impact area

Source(s): Authors' own creation

Table 2.
Mean impact area
scores, by cluster

resulting in a 75% agreement rate. Multiple rounds of discussions between the co-authors using various examples of cases and codes are conducted to refine codes over two stages of coding.

In the first stage, an inductive coding tactic was employed using data from the websites of profiled B Corps and news articles, case studies, or blog posts. This step aimed to develop a fulsome picture of the types of organizations in each cluster and how impact was integrated into their operations. After several rounds of testing to identify information that can be reliably and consistently found across the available secondary data, several characteristics were examined in each organization. Each organization was coded to indicate where impact was created within one of three broad categories: core offerings (main product or service provided), target markets or delivery systems (how the organization operates), and what specific mechanism within the assigned category was used to create impact. Each organization's stated mission, vision and values were particularly relevant for this analysis round, as these statements often indicate where the organization integrates impact into their operations.

The second step of this analysis sought to create a more detailed picture of the nature of the impact created within each cluster using the impact sub-scores embedded in the B Impact Assessment [4]. These impact sub-scores are a more specific indicator of how the company's impact in a particular area is created and provide insight into achieved outcomes and measurable practices rather than stated goals. For each organization coded, we noted the impact sub-score in which they received the highest number of points in the impact area(s) associated with their cluster.

Each stage of coding provided scaffolding from which a clear picture of the unique characteristics of each cluster could emerge. The first coding step enabled the differentiation of clusters with similar impact area performance. For example, Cluster 3 (*Customer Impact Improvers*) and Cluster 5 (*Customer Access Improvers*) both outperformed all other clusters in the Customer impact area. Still, the first stage of coding revealed Cluster 5's emphasis on serving underserved communities and providing impact-oriented financial services compared to Cluster 3's focus on improving the impact of corporate clients. These clusters also had similar impact sub-score performance, which could be interpreted much more meaningfully in light of the findings of the first round of coding. A more detailed overview of the two coding stages, including evidence from the data, can be found in [Appendix 3](#). After presenting each cluster, a cross-cluster analysis was conducted to develop empirical observations, which were then used to generate theoretical propositions (e.g. [Mena et al., 2013](#)).

Within-cluster analysis

The subsequent findings are grouped by cluster and examine the influencers, design decisions and building blocks of the PDOs in our sample. A summary of the main insights can be found in [Table 3](#).

	Clusters/ Supply chain design element				Customer access improvers
	Community champions	Environmentalists	Customer impact improvers		
Key Influencers	<i>Political and economic environment</i> <ul style="list-style-type: none">- Presence of trusted and effective charitable organizations within the local community (e.g. <i>Flowers for Dreams, CIRCLE Alliance Bank, Therafit Shoe</i>)- Characteristics of the local environment in terms of organizations, workforce (e.g. <i>Taos Ski Valley Inc., Opaline, Tech Networks of Boston</i>)	<i>Industry conditions</i> <ul style="list-style-type: none">- Perceived consumer adaptability (e.g. <i>Lunapads, Dopper, Klean Kanteen</i>)	<i>Industry conditions</i> <ul style="list-style-type: none">- Practices of mainstream competitors (e.g. <i>People's Architecture Office, Rally Assets, R + M Agency</i>)	<i>Political environment</i> <ul style="list-style-type: none">- Institutional voids in the target market (e.g. <i>Fortafolio Verde, Travois, VCC Social Enterprises</i>)	
Key Design Decisions	<i>Physical network design</i> <ul style="list-style-type: none">- Localization of supply chains (e.g. <i>Oaklandish, Beyond Green Sustainable Food Partners, 7Peaks Brasserie</i>)	<i>Sourcing strategies</i> <ul style="list-style-type: none">- Supplier selection criteria (e.g. <i>MotherLove, Traditional Medicinals, All Good</i>) <i>Physical network design</i> <ul style="list-style-type: none">- Localization of supply chains (e.g. <i>Honest to Goodness, Cambridge Naturals, Delicious & Sons</i>)- Inclusion of reverse supply chain (e.g. <i>Seams to Fit, REfficient, Better World Books</i>)	<i>Social network design</i> <ul style="list-style-type: none">- Scope of the customer market: PDOs, NGOs (e.g. <i>Mission Partners, Brown Bread, Dog & Bone</i>)- Durability of customer relationships: project-based, short-term (e.g. <i>Brink Communications, GroundFloorMedia, Kin and Co</i>)	<i>Social network design</i> <ul style="list-style-type: none">- Scope of the customer market: underserved customers, PDOs (e.g. <i>Beneficial State Bank, Almanatura, City First Bank</i>)- Durability of customer relationships: On-going relationship (e.g. <i>Sunrise Banks, Spring Bank, Clearinghouse CDFI</i>)	
Building Blocks	<i>Social capital</i> <ul style="list-style-type: none">- Ongoing investments in employees' time and financial resources invested in the local community (e.g. <i>AWA Alliance Bank, SpaceCubed, Sustainable Law Group</i>)- Development of meaningful relationships in the community (e.g. <i>Living Room Realty, Global Leadership Foundation, Trico Homes</i>)	<i>Inter-firm processes</i> <ul style="list-style-type: none">- Investments in supplier identification, selection and development (e.g. <i>Andean Naturals, Sustain Natural, Coffee Collective</i>)- Investments in ongoing supplier compliance (e.g. <i>Yoni, Organic Basics, Factors Group, HomeFree</i>) <i>Technology</i> <ul style="list-style-type: none">- Greener technologies (e.g. e.g. <i>Diasen, eWater Systems, Locus Agricultural Solutions</i>)	<i>Inter-firm processes</i> <ul style="list-style-type: none">- Strong stakeholder interface capabilities (e.g. <i>Smile, InKind Capital, LOACOM, Laridae</i>)- Capabilities for working with PDOs (e.g. <i>Humanitarian Advisory Group, Coates Kokes, Sagent Marketing</i>)	<i>Social capital</i> <ul style="list-style-type: none">- Intensive relationship building with beneficiaries (e.g. <i>Kindred Credit Union, 4G Capital, Success Rehab</i>)- Creation of supplementary services for beneficiaries (e.g. <i>ilumexico, Big Issue, Lancaster Works</i>)	

Table 3.
Summary and examples: Supply chain design across different impact areas

Source(s): Authors' own creation

Cluster 1 — Community champions

Impact area description. Organizations in this cluster consider the externalities that the organization's offerings and operations have on its local community, emphasizing underserved populations and responsible procurement practices like supplier codes of conduct. Many enterprises in this cluster provide support services for firms aiming to develop capabilities for sustainability — for instance, impact strategy consulting or leadership for sustainability. This cluster differs from others in the prevalence of local economic development as a critical goal pursued by hosting community events, practicing local sourcing, or engaging in place-based community building.

Influencers. Two of the dominant impact sub-scores within this cluster relate to philanthropic engagement. They are thus highly influenced by the presence of trusted and effective charitable organizations within the local community. As with donations to local charities, an organization's ability to source and hire locally — captured in local economic development and local involvement impact sub-scores — will be heavily influenced by existing local organizations and characteristics of the local workforce.

Design decisions. When organizations commit to local sourcing and hiring, facility location decisions are paramount within the physical network design. *Spacecubed*, for example, is an organization managing collaborative workspaces and entrepreneurship and innovation-related educational programs. Economic and demographic conditions affect their ability to create an impact in the communities where they decide to locate a workspace. To ensure their business model is sustainable, there must be enough entrepreneurs who could benefit from their co-working spaces or services. Yet, locating facilities and programs in underserved communities may enhance their long-term impact.

Building blocks. Organizations that pursue community impact through giving require ongoing investments of employee time or financial resources in the wider community to achieve their desired impacts. Furthermore, as impact is determined by the effectiveness of the charitable organizations to whom the focal organization directs resources, focal organizations may be best served by investing time in designing their social networks.

Regardless of how an organization pursues community impact, a crucial building block is the development of meaningful relationships with key stakeholders in the community. An illustrative example is *Oaklandish* which started in the early 2000s as an art project designed to promote local history and heritage and support the local economy. Their community engagement programs include support job creation, donations to non-profits, local sourcing of products and services, and numerous community-based events.

Cluster 2 — Environmentalists

Impact area description. The *Environment* impact area rewards organizations for developing and implementing policies related to waste reduction, environmental certifications, energy use, water use and toxin reduction within their operations and throughout their supply chain. This is the only cluster with primarily product supply chains. Many organizations in this cluster provide sustainability products, wellness products, or create impact primarily through sustainable sourcing. Thus, environmental impact may be embedded in an organization's formation via product/service design. However, organizations that wish to improve their environmental impact can implement sustainable sourcing practices within existing supply chains.

Influencers. An important driver of environmental impact is consumer behavior and an organization's willingness to encourage behavior change to decrease environmental harm. Organizations that excel in the toxin remediation/reduction impact sub-scores reduce their environmental impact by sourcing sustainable materials or operating in an environmentally efficient way. These organizations take ownership of sustainability away from their

customers by decreasing impact during production rather than during the use phase of the product life cycle. *Callaly*, which scored highly in toxin reduction, produces menstrual products using organic cotton and other low-impact or biodegradable materials. An essential influencer for *Callaly*'s formation as an organization was a persistent lack of innovation in design and materials within the disposable menstrual products sector. As the production of conventional menstrual products tended to require inputs in the upstream supply chain, like pesticides and bleach, industry norms influenced the development of *Callaly*'s approach to creating an environmental impact.

In contrast, organizations that excel in the resource conservation impact sub-score may see consumer behavior change as an imperative and create durable, high-quality products that reduce environmental harm through extended use phases. Another B Corp that produces menstrual products and scores highly on resource conservation is *GladRags*, whose core offerings are reusable menstrual products. Instead of catering to consumers who rely on disposable products, *GladRags* reduces waste through behavioral change by encouraging the uptake of reusable products. Both *Callaly* and *GladRags* are influenced by customer behavior but differ in whether they try to minimize the negative impacts of an entrenched behavior or whether the behavior is the target of their intervention.

Design decisions. The toxin reduction and resource conservation impact sub-scores have implications for supplier selection. Where toxin reduction is the goal, environmental criteria will drive supplier selection. Organizations that aim to conserve resources and reduce waste may instead implement a sourcing strategy based on durability, quality and safety to prolong the use phase of their products. *U-Konserve*, which aims to reduce waste by producing reusable containers, highlights the value of product durability, noting, "*The longer our products last, the fewer resources are used to reach our collective goal: to reduce food-packing waste.*"

These organizations also often integrate third-party certifications into their sourcing strategy. For example, *Apologue*, a liqueur producer, highlights that all their ingredients are certified non-GMO. While they also strive for local sourcing, their commitment to non-GMO inputs overrides geographic prioritization, where local suppliers who meet their non-GMO criterion are unavailable.

Another SCD common in organizations that try to reduce waste involves the resale of used products. Several organizations like *Seams to Fit*, *Green Libros*, *World of Books* and *REfficient Inc.* extend the use phase of goods through resale rather than durability improvements. Consequently, their physical network design will include a reverse supply chain to facilitate the collection of post-consumer materials for resale.

Building blocks. Growing demand for environmentally friendly products encourages organizations to consider sustainability metrics when evaluating potential supply chain partners. However, in some industries or regions, a lack of demand has stymied the development of robust markets for sustainable inputs. Thus, these organizations would benefit from the development of supplier identification and evaluation processes. Additional investment may also be required for ongoing supplier compliance monitoring to maintain third-party sustainability or safety certifications. To assess their impact and benchmark it with traditional industry practices, the Danish apparel producer *Organic Basics* has developed a supply chain impact assessment tool following a life-cycle approach.

Finally, organizations seeking to reduce resource use and pollution must invest in greener technologies to reduce water and energy consumption and mitigate the impacts of any pollution generated during production. These investments may need to be made throughout the supply chain. To minimize the water-related impacts associated with the pulp and paper industry, *The Cheeky Panda*, a bamboo toilet paper company, partners with a factory that recycles water used in the pulping process and captures waste heat to produce electricity.

Cluster 3 — Customer impact improvers

Impact area description. Cluster 3 was not the top performer in any impact area (see [Table 2](#)). However, these organizations had strong performance in both the *Customers* and *Workers* impact areas. As the *Workers* impact area focuses on internal impact, we do not anticipate that it is driven by SCD. For this reason, the analysis of Cluster 3 will focus on its impact via customers. Organizations in Cluster 3 were more likely to create impact by providing impact-oriented services like consulting to conventional organizations and other PDOs, thereby helping other organizations improve their impact.

Influencers. The primary influencer relates to the nature of the target customer group. Organizations that work with underserved organizations or other PDOs may face pressure related to the sustainability or social responsibility values embedded in their operations, regardless of the nature of their core offering. For example, *Matteria* provides recruitment and talent management services for PDOs. Organizations like *Matteria* may be expected to embody their customers' values to remain competitive and may design their supply chains to be highly sustainable or socially responsible. Many organizations in this cluster position themselves as a sustainable alternative to mainstream competitors. For example, *Hobé Hosakawa Marketing*, in their company description in the B Corp impact database, “*prides [themselves] on being part of a new wave of marketer, who is ethical and cares about the customers they serve.*” This identity as a “*new wave of marketer*” is contingent on their customers' understanding of what it means to be a conventional marketing organization. Their statement implies that traditional marketing firms may not prioritize ethics and customer impact to the degree they do.

Design decisions. All organizations pursuing customer impact must make two essential design decisions related to their customer relationships. The first decision is defining the scope of the customer market. For example, B2B organizations will face different constraints and challenges if they serve non-profit organizations, government agencies, or charities versus for-profit customers. Thus, the scoping decision has important implications for what challenges these organizations will need to be prepared to withstand and how flexible their core offering will need to be to meet the demands of diverse groups of customers.

The second important decision is the durability of customer relationships. Organizations whose impact is derived from aiding underserved PDOs often offer conventional services like HR support, legal services, or accounting but tailor how they offer these services to suit the needs of non-profits and other PDOs. These customer relationships are more durable and involve recurring interactions between parties. In contrast, organizations that try to create an impact by improving the sustainability of conventional organizations tend to have short-term relationships with customers, engaging in project-based interventions that can help them to carry out new impact-oriented initiatives independently in the future.

Building blocks. Organizations serving low-resource PDOs or improving the performance of conventional organizations require two important building blocks. First, they must develop strong inter-firm processes supported by stakeholder communication and management capabilities. Particularly when serving conventional organizations, focal organizations must overcome differences in institutional logics with their customers. This may mean adequately communicating the instrumental value of sustainability practices to encourage improvements. Second, organizations serving PDOs must educate themselves on the intricacies of working within the charitable or non-profit sector. Their customers may face unique regulatory hurdles within their operations due to their legal structure. For example, *Adopt & Embrace* is a firm that guides organizations in healthcare, the public sector and education (among others) through the implementation of Office 365 software. To be successful in their work, they must be aware of the unique challenges in change management and organizational governance faced by PDOs.

Cluster 4 — Internal impact

Impact area description. Organizations in Cluster 4 had the strongest performance in both the *Workers* and *Governance* impact areas. Evaluation of the *Workers* impact area emphasizes multiple dimensions of employee well-being, including salaries, benefits, work hours, training and education, opportunities for advancement and worker safety. The *Governance* impact area reflects the extent to which an organization enshrines its commitment to social impact within its business model and policies. As this study focuses on how SCD affects the realization of social and environmental impacts and these impact areas have an internal orientation, Cluster 4 will not be discussed further but is included in [Appendix 4](#).

Cluster 5 — Customer access improvers

Impact area description. As organizations that excel in customer impact, Cluster 5 differs from Cluster 3 in its more prominent focus on serving underserved customers. Compared to all other clusters, it had the greatest proportion of organizations whose primary impact-creation mechanism is through the selection of their target market.

Influencers. The external political and economic contexts heavily influence organizations prioritizing underserved organizations or communities in their target markets. The presence of underserved customers (individuals or organizations) suggests institutional voids constraining the activities of these organizations or diminishing the well-being of their intended beneficiaries. PDOs emerge to fill these voids by providing organizational development services, professional services, or consumer-oriented offerings tailored to address the constraints their customers face. An illustrative example is the French private equity fund *Citizen Capital*, which finances and supports entrepreneurs developing mission-based businesses. They specifically prioritize businesses started by underserved entrepreneurs where the emerging business addresses a pressing need of an underserved population.

Design decisions. Organizations in Cluster 5 face the same scoping and durability decisions described in Cluster 3. Additionally, characteristics of individual beneficiaries (e.g. low-income vs very poor, urban vs rural) will determine the channels and technologies through which organizations connect with customers. In terms of the durability of relationships with underserved customers, intensive relationship-building is needed to facilitate access to the beneficiary population, regardless of the duration of the focal organization's intervention.

Building blocks. Organizations trying to serve low-resource PDOs or underserved communities must be prepared to adapt their core offerings to garner beneficiary engagement. This may include investing in supplementary services enabling underserved customers to derive more value from the organization's offering. For example, *iluméxico* recognized a need for consistent access to light in parts of rural Mexico, where diesel lamps or candles were common. Not only did they design lighting solutions that can function off-grid, but they also adopted inclusive financing policies, developed a network of rural offices close to customers, implemented training programs to hire beneficiaries within the organization and offered workshops on solar equipment use and maintenance.

Further, these organizations must work to build strong relationships with beneficiaries to set beneficiaries up for success and ensure offerings meet beneficiary needs. *4G Capital* provides one example of how these relationships can be built. They provide business loans to African micro-entrepreneurs, and as part of their programming, customers receive business development training from field staff as loans are dispersed. This training continues throughout the customer's relationship with the organization.

Cross-cluster analysis

The within-cluster analysis outlines that different types of societal impact can be linked to different groups of stakeholders and that the nature and challenges faced by these stakeholders' influence SCD decisions and the necessary building blocks. Based on this, we propose four impact pathways linked to four groups of stakeholders: communities, environment, organizational customers and underserved consumers. While each impact pathway corresponds to a cluster, we refer more broadly to creating impact for different types of stakeholders to develop wider implications. [Figure 2](#) outlines each impact pathway's intricacies and key insights regarding SCD choices. Below, a critical comparison of the four impact pathways regarding the SCD dimensions is conducted, and propositions are put forward.

Influencers

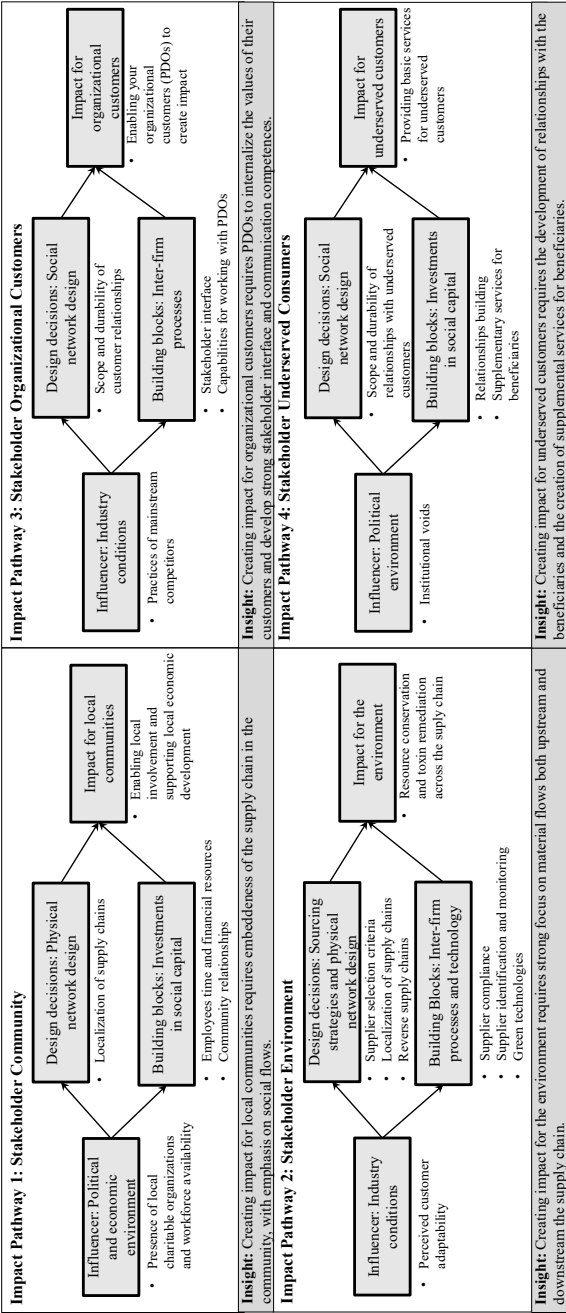
Characteristics of the environment are crucial influencers of SCD for creating various forms of impact. Organizations creating impact for communities or underserved consumers are heavily influenced by the political conditions in their external environments, namely, institutional voids and the needs of the non-governmental sector. The political environment influences how the non-profit sector develops in an area, the institutional voids that remain and the population of service providers with whom PDOs can partner. These two influencers represent visible needs in the political environments of their targeted community or beneficiary populations that determine how these organizations must develop their supply chains. *Community Champions* recognize and act on gaps in economic opportunity in their communities by hiring and sourcing locally and connecting with existing service organizations through financial donations and in-kind contributions of volunteer time. *Customer Access Improvers* similarly identify groups of people or organizations currently underserved, often by the financial services sector and navigate market failures and institutional voids to provide services that have been constrained until then.

In contrast, industry conditions and opportunities affect how PDOs create environmental impact or enhance the impact of organizational customers. Industry conditions, including the market demand for certain types of products or services from customers and existing industry standards for sustainability practices heavily influenced *Environmentalists* and *Customer Impact Improvers*. These influencers reflect opportunities in the external environment that PDOs can leverage and provide fertile grounds to combine economic and societal goals. *Customer Impact Improvers'* offerings help customers stand out against competitors via impact creation or help PDOs enhance their viability or impact in challenging environments. *Environmentalists* must understand the boundaries of environmentally sustainable behaviors their customers are willing and able to adapt to gradually move customers towards sustainability or provide the tools customers need to make a much more significant jump in their sustainability behavior. In sum, PDOs address sustainability shortcomings within their external environment, like institutional voids, social inequality, or unsustainable practices within their industry. However, these influencers are not all equally salient across all PDOs. Therefore, we propose that:

- P1. Characteristics of the political environment and industry environment are the dominant external influencers of SCD in PDOs. The relative salience of each influencer is determined by the stakeholder group targeted by a PDO's mission.

Design decisions

The analysis reveals differences in the prominence of material and social flows for the creation of impact for different stakeholders. The focus on environment and community



Source(s): Authors own creation

Figure 2.
Delivering societal
impact through supply
chain design – Four
impact pathways

impact leads PDOs to integrate their mission in the upstream supply chain via sourcing strategies and physical SCD. In contrast, a focus on customers (either underserved consumers or organizational customers) leads PDOs to focus on their downstream supply chain with a strong emphasis on social competencies and stakeholder interface capabilities.

Organizations creating benefits for the environment or community design material flows to generate impact in two ways: through strategic and impact-oriented supplier selection and their physical network design. *Environmentalists* often need suppliers to reduce environmental externalities across the supply chain and reduce resource usage and toxins in the early stages of production. As a result, suppliers are strategically important stakeholders for *Environmentalists*. In their physical network design, *Environmentalists* who employed resale models integrated reverse supply chains into their supply chains. Meanwhile, organizations creating community impact practice localization within their hiring and sourcing practices and strategically design their physical network to locate operations in communities where they can have the most significant impact and potential for viability.

Relationships with customers serve as crucial enablers of impact creation via the target market (e.g. *Customer Impact Improvers*, *Customer Access Improvers*). Thus, the appropriate design of social flows is key. The core social network design decision was the set of customer characteristics that would be used to establish the scope of the customer market and the longevity of customer relationships, both of which constitute important characteristics of their social networks. *Customer Impact Improvers* and *Access Improvers* also create impact through downstream relationships that support impact creation with customers or other secondary stakeholders like NGO partners. Therefore, we propose that:

- P2. Creating impact for stakeholders like the environment and community requires the integration of the sustainability mission upstream in the supply chain via sourcing strategies or physical SCD. Creating impact via the target market (underserved consumers and organizational customers) requires a strong emphasis on social flows within the SCD.

Building blocks

Investments in social capital with beneficiaries and communities are relevant when creating impact for communities and underserved customers to facilitate access to their beneficiaries and help them understand their needs. These relational resources must be developed after the specific target market has been selected (e.g. building a trusting relationship with chosen communities and beneficiaries). *Community Champions* are often committed to ongoing financial and in-kind support for local organizations to build social capital within the community, while *Customer Access Improvers* invested in relationship-building efforts and supplementary services rather than focusing on profit maximization.

In contrast, the dominant building blocks for organizations targeting the environment or organizational customers are capabilities in supplier identification, sustainability evaluation and verification, and stakeholder communication that they can develop before the initiation of key partnerships. These capabilities will help them establish and manage effective inter-firm processes that will enable *Environmentalists* to ensure environmental impacts are considered across the supply chain and allow *Customer Impact Improvers* to communicate effectively across institutional logics. Moreover, investments in tangible assets as an enabler of purpose-driven SCD were primarily evident among the *Environmentalists*, who relied on green technology investments and infrastructure to create sustainable products. These tangible investments were not required among clusters focused on social impacts (e.g. for customers and communities). As a result, we propose the following:

- P3. Pursuing environmental impact requires investments in tangible assets in the form of green technologies, while investments in social capital and inter-firm process development are more important building blocks for the creation of impact for communities and customers (both underserved consumers and organizational customers).

Theoretical contributions

This study makes several contributions to the existing research on social impact supply chain management and the creation of societal impact via SCD. First, this study presents a detailed description of how organizations across various sectors and industries design their supply chains to pursue different types of societal impact. We link different forms of impact to stakeholder groups and develop propositions relating SCD choices to the characteristics and nature of these stakeholders. The proposed four impact pathways draw attention to how SCD in PDOs is shaped by the needs and opportunities in the political and industry environments in which they are embedded and outline essential differences in the importance of the design of material flows versus social flows. Finally, the results suggest that certain types of impact creation entail building blocks that can only be obtained after target beneficiaries have been selected and that the investments needed to enable purpose-driven SCD differs significantly between organizations pursuing predominately social (e.g. customer, community) versus environmental impact.

Supply chain design in PDOs and disaggregated forms of societal impact

This work extends the existing literature on SCD for social impact (e.g. [Bals and Tate, 2018](#)), SISCM ([Pullman et al., 2018](#)) and supply chains including PDOs ([Meqdadi et al., 2020](#)) by linking SCD with different impact areas each reflecting impact creation for different types of stakeholders. While previous literature has suggested that addressing sustainability objectives more holistically requires the integration of a wide range of stakeholders ([Montabon et al., 2016](#)), this study specifically links different groups of stakeholders to specific SCD impact pathways, outlining the particular building blocks required to address the needs of different groups of stakeholders and thereby create societal impact. Our findings show that some investments can be made to enable multiple forms of impact (e.g. social capabilities for different types of customer impact). Yet, each impact type caters to the particular needs of a stakeholder group, and therefore, there might be increased complexity from pursuing multiple types of impact simultaneously.

The disaggregation of societal impacts is also relevant for the wider sustainable supply chain management literature, which has focused on traditional supply chain metrics for measuring sustainability and perpetuated a narrow view of impact ([Montabon et al., 2016](#)). We address this shortcoming by disaggregating different forms of societal impact and providing insight into how SCD can be aligned with each form. We also respond to calls to broaden the focus of social responsibility in supply chain literature through our use of the B Impact Assessment, which incorporates stakeholders beyond those in the immediate supply chains ([Zorzini et al., 2015](#)).

Our nuanced insights on SCD decisions and their alignment with different forms of impact illuminate how an organization's mission must be reflected in the attention paid to the external environment, the design of social and material flows, and the development of resources and capabilities for impact. Each of these elements directly impacts an organization's ability to achieve its desired impact and operate successfully. Appropriate SCD can help PDOs withstand uncertainty, volatility and institutional complexity associated with impact-oriented business models ([Longoni et al., 2019](#); [Lorentz et al., 2013](#);

Reiner *et al.*, 2015). By identifying relevant design characteristics and investments needed for different forms of impact, we complement previous studies that have examined the ability of firms to manage social issues (Klassen and Vereecke, 2012), extend the time horizon of managerial decision-making (Montabon *et al.*, 2016) and address the needs of the natural environment (Hart and Dowell, 2011).

This study also contributes to the social entrepreneurship literature by employing a supply chain perspective to examine B Corps. Previous studies in social entrepreneurship and sustainable business have investigated various aspects of B Corps, namely sustainability performance (Chen and Kelly, 2015; Romi *et al.*, 2018; Wilburn and Wilburn, 2015), identity formation and B Corp community membership (Conger *et al.*, 2018), mission integration (Gamble *et al.*, 2020), the role of women in mission-driven business (Grimes *et al.*, 2018), as well as the role of external environmental factors in their development and operations (Harjoto *et al.*, 2019; Hickman *et al.*, 2014). Despite this existing work, no scholarship yet examines B Corps and their impacts from a supply chain perspective. The B Corp movement highlights the potential impacts that PDOs can have in their communities and across the world in driving social and economic value creation while remaining financially viable. The supply chain structures and practices adopted by certified B Corps could serve as a valuable template for conventional for-profit businesses looking to increase their impact.

The importance of support flows in sustainable supply chain design for impact

The cluster analysis highlighted the many B Corps provide services to other organizations. Among the Community Champions, Customer Impact Improvers and Customer Access Improvers, 10% of organizations or more provided services to other PDOs. These services often strengthen the sustainability capabilities of customers and may be of paramount importance for these customers to create various impacts or maintain functional material flows. Expanding on Carter *et al.*'s (2015) understanding of support supply chains, we consider professional services and those focused on organization impact, in addition to organizations providing financial and information flows. Presently, much of the work on support supply chains still emphasizes financial support flows (e.g. Bals and Tate, 2018) such as insurance and banking, though some work has emphasized the role of professional services like IT, call centers and help desks (Carbone and Moatti, 2016). Through the detailed descriptions of each cluster, this study provides a glance at impact-oriented actors operating "outside the visible horizon" which is an area with limited research or managerial attention (Carter *et al.*, 2015). Support supply chains are essential in helping traditional supply chain actors develop much-needed capabilities and competencies to implement sustainable SCDs (Rosca *et al.*, 2022).

Implications

Our study entails valuable managerial implications. First, managers in PDOs need to attune themselves to different types of cues in the external environment (i.e. political vs industry-based) depending on the impact they are trying to create. The insights from this study can help managers direct their attention to the influencers (e.g. changes in local governments, evolutions of industry standards) that are most salient for their ability to achieve their desired impact.

Second, the findings indicate that some types of impact may be simpler for managers to integrate into existing supply chains, while others are best considered at inception. Mission integration into the physical network design for the creation of community and environmental impact requires intentionality and forethought that may constrain post-hoc implementation. Meanwhile, other types of impact creation (e.g. for underserved and organizational customers) emphasize social network design and relationships that organizations can develop during their operations.

Third, critical building blocks for implementing appropriate SCD differ per impact type. Social capital is a crucial requirement for creating impact for communities and underserved customers, and it can only be developed with the chosen beneficiaries. Managers must recognize the time required to build these relationships and pace their supply chain development accordingly. Meanwhile, managers of firms with strong stakeholder interface capabilities and capabilities in sustainability management and supplier monitoring may be able to implement their SCDs more quickly. By describing the multitude of supply chain considerations required to create different types of societal impact, this study illustrates the complexity involved in SCD for impact.

Fourth, investments in social flows with external stakeholders can enable organizations to create different forms of impact without major additional investments. For example, organizations pursuing community impact can readily pursue impact for underserved customers within their existing SCDs by tuning additional managerial attention to the coordination of social flows within the supply chain.

Limitations and future research

The SCD of PDOs needs to be understood in the context of their goals, social missions and performance measured broadly. The findings of this study may not generalize beyond PDOs because many organizations in this sample are developed from inception with a clear mission in mind. For example, many *Environmentalists* are firms that introduced novel, environmentally-friendly versions of existing products to the market rather than adapting an existing offering to decrease negative externalities. These organizations may be more capable of integrating sustainability into their sourcing and supplier relationships, starting with relationship initiation. They may, therefore, not face the same challenges as existing organizations attempting to reconfigure their supply chains for sustainability.

As our study is cross-sectional, it does not specifically address the link between SCD and performance over time. Longitudinal analysis of these relationships is needed to understand how social mission affects supply chain strategy and design and how supply chain challenges may contribute to “mission drift” issues that plague social enterprises (Ramus and Vaccaro, 2017). Particularly with radical sustainability-driven supply chain modifications, it is important to further explore the performance implications for the firm’s long-term viability.

B Corps have been used before as a sample of PDOs. However, it is clear from our investigation that they are highly heterogeneous, and not all B Corps could be reasonably considered a social enterprise. While B Corps may be considered purpose-driven in the sense that an entrenched set of pro-sustainability values guides their decisions, they are not all created explicitly to pursue a particular social or environmental mission. This limitation relates to a more significant challenge within the social entrepreneurship literature of defining what types of organizations can and cannot be classified as social enterprises and whether self-identification as a social enterprise or PDO is sufficient for the organization to be treated as such by researchers. Future research on PDOs and social entrepreneurship should further disentangle the characteristics of social enterprises to better understand their implications for organizational viability and impact.

An additional limitation is that the SCD literature used to guide the content analysis in this study tends to focus heavily on product rather than service supply chains. As many of the certified B Corps operate provide B2B services, there may be service design considerations that were overlooked in this study. Additional research on this topic could examine if and how social impact objectives are internalized differently within service supply chains versus product supply chains.

Finally, previous literature has argued that meaningful progress toward sustainability can be supported or hindered by an organization’s institutional logic (Montabon *et al.*, 2016). Institutional logics may undermine sustainability, even when an organization has designed

its supply chain to pursue a particular sustainability objective. Sustainable SCD practices alone are insufficient to guarantee the achievement of the desired impact if they do not adequately accommodate differences in managerial cognition based on institutional logics. Therefore, further research should pay close attention to the role of institutional logics in enabling or inhibiting the creation of different forms of impact through SCD.

Traditional literature on SCD focuses extensively on issues such as cost minimization, facility management, and physical and material flows with an eye to competitive advantage and efficiency (Krægøth *et al.*, 2017). While this focus is justified, given the origins of supply chain management as a field, changes to scholarly and practitioner thinking on sustainability have pushed researchers to explore supply chain issues with a more holistic approach in mind (Lee and Tang, 2018).

Notes

1. The data on certified B Corps on an aggregate level is made available by B Lab for researchers in several forms via the platform data.world (<https://data.world/>). To confirm its reliability, the researchers have conducted several checks between the information available online (on each B Corp's page on the B Lab website) and the information provided in the file.
2. Divides intra-cluster compactness by inter-cluster separation. When this score is calculated for each possible number of clusters centers, the maximum value of this score indicates which number of cluster centers would lead to the most successful division of the data.
3. Extends the Calinski-Harabasz index by explicitly taking the density of the resulting clusters into account. It is sum of the mean dispersion in each respective cluster and of the inter-cluster density.
4. The impact sub-scores are available per B-Corp, as shown here: <https://www.bcorporation.net/en-us/find-a-b-corp/company/caravela-coffee>. For example, for the impact area Environment, this B Corp has scored 27.5 points as follows: Land & Life 7.4, Toxin Reduction/Remediation 4.7, Land/Wildlife Conservation 4.2, Environmental Management 2.5, Air & Climate 2.1, Water 1.4. The aggregated impact sub-scores for all 316 organizations coded have been accessed via the platform data.world (<https://data.world/>).

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Appendix 1

B Corporation Certification Process (Lab B, 2023)

At the time this study was initiated, companies can apply for B Corporation certification when they complete the following three actions:

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Impact Assessment

First, businesses are required to complete the B Impact Assessment and achieve of sum score of at least 80 across the five included impact areas: *Community, Customers, Environment, Workers, and Governance*. Within this assessment, B Lab differentiates between operational impacts and characteristics of an organization's business model which may affect its impact and responsiveness to stakeholders. The assessment assigns each business to a particular track based on its sector, size, and geographic location. These tracks determine the specific questions that a company will be assigned within the assessment to account for the relative materiality of some impacts or topics in some sectors relative to others (i.e. environmental impacts within manufacturing organizations vs professional services), as well as the weight of each question. B Impact Assessment submissions are evaluated and validated by B Lab staff.

In the calculation of the scores, industry and company-specific characteristics are considered to generate comparable results among the heterogeneous pool of companies. For example, organizations operating within the agricultural sector may have more weight assigned to their environmental performance than an organization offering professional services. For this reason, cluster results are likely to correlate with industries.

Businesses must also pass a risk review. This includes a disclosure questionnaire, in which companies are asked to identify potentially sensitive topics related to their work, such as past fines, sanctions or legal settlements, and the use of child or forced labor. Certification standards vary for organizations connected to a set of identified "controversial issues and industries" such as the bottled water industry or for-profit higher education.

Legal Requirement

Businesses seeking certification must legally change their governance structure to enshrine a stakeholder governance model. In doing so, this requirement ensures that a company's commitment to creating societal value persists even if the leadership of the company changes. B Lab has created a "legal requirement tool" where companies can indicate their legal structure (i.e. corporation, LLC, co-operative) and their location and receive specific language that they must include in their governing documents and the sections of their governing documents where it must be included.

In jurisdictions where formal, voluntary adoption of a stakeholder governance model is not legally permitted, companies will be asked to sign a B Corp Agreement pledging to adopt this structure when legally permitted. B Lab is actively involved in advocating for regulatory change to permit the formalization of shareholder governance models.

Transparency

Certified companies must agree to have a summary of performance on the B Impact Assessment made public through their profile in the B Corp directory.

Maintaining Certification

To maintain B Corp certification, companies must recertify every three years. Recertification involves completing the B Impact Assessment again, and potentially participating in a site review from B Lab staff.

Appendix 2

Robustness tests – Internal consistency and external validity

To investigate the robustness of our solution approach, we have conducted additional tests for internal consistency and external validity. First, the internal consistency of the clusters was assessed using discriminant analysis, ANOVA and a resampling procedure (Mair *et al.*, 2012). The discriminant analysis is trained with 50% of the observations that are sampled randomly. The trained model classifies approximately ninety-five of the resulting observations correctly. Multivariate ANOVA yields *p*-values that are approximately zero, which indicates that the partition corresponds to five distinct, statistically significant groups. Finally, the internal stability of the clusters is analyzed by bootstrapping the dataset one hundred times with replacement and re-running the K-means algorithm. The resulting partitions are compared to the original partition based on the Jaccard Similarity (Hennig, 2007). The average Jaccard Similarity outcomes for the data are 0.73, 0.91, 0.70, 0.75, and 0.68. Overall, these analyses indicate that the solution approach is robust and consistent.

Second, to explore the external validity of our solution approach, statistical analysis with additional external variables not used in the initial clustering have been conducted. This approach reduces a researcher's judgments and biases and is regarded as superior (Brusco *et al.*, 2017; Ketchen and Shook, 1996). External variables included those found in the original B Corp database such as firm size, years certified, country and region, as well as data found in external databases such as GDP per capita and CO₂ emissions per capita. All these analyses reveal statistically significant differences among the five clusters and have helped profiling the emerging clusters.

Third, as a further means of external validity and profiling, a text analysis has been conducted on the company descriptions provided by each firm. These descriptions are available online, vary between a few sentences and a few long paragraphs, and aim to provide an overview of the company, its mission, and main activities. These descriptions are used in a basic textual analysis to reveal underlying differences in the unstructured data patterns per cluster. After cleaning and stemming the words, to discover the patterns in the text, the TF-IDF algorithm is used. This analysis has further revealed that the main five clusters are distinct and present underlying differences in their structures.

Appendix 3

Summary cluster characteristics: Evidence from coding

The table below presents a summary of insights from the stages of the content analysis. First, we note the proportion of each cluster that created impact through each of the three broad categories (i.e. core offering, target market or delivery system). Next, we highlight recurring mechanisms used to create impact within each category and the proportion of organizations in the cluster for whom that is the primary impact creation mechanism (e.g. 21.3% of organizations in Cluster 1 offer impact-oriented consulting as their core offering). We subsequently provide the proportion of organizations in each cluster that received their highest number of points in the B Impact Assessment from a given impact sub-score. Using these impact sub-scores and organizational data gathered during the first round of analysis, step 3 aligned the impact creation mechanisms used in each cluster with the key concepts from the SCD literature presented in Table A1 related to influencers, design decisions and building blocks.

Notes:

- (1) The percentages in the step 1 of coding refer to the proportion of companies that we identified as creating impact through core offering, target market and delivery system. For example, 40.4% of the *Community Champions* cluster create impact through their core offering, with 21.3% of the cluster creating impact by providing impact-oriented consulting services. The percentages show how many cases in this cluster created their primary impact via their core offering.
- (2) The percentages in the step 2 of coding refer to the proportion of companies in each cluster for which a given impact sub-score was the one where they earned the largest number of points (e.g. Impact area Environment, Sub-impact scores – Resource Conservation and Toxin Remediation).
- (3) For both stages of the coding, we have used a threshold of 10%: this means that a code was reported only if more than 10% of companies showed it. Codes with less than 10% coverage were excluded. For example, in step 2, for the cluster Environmentalists, within the impact area Environment, there are more codes but their frequency was lower than our 10% threshold. Therefore, they are not reported.

Step 1 Inductive coding from websites and annual reports					Step 2	Step 3
Community Champions	Core offerings		Target markets		Coding from B impact assessment impact sub-scores	Deducing supply chain design
	Delivery system		Emergent themes			
Community Champions	<p><i>Total Cluster Representation (40.4%)</i></p> <p><i>Impact-Oriented Consulting (21.3%)</i></p> <ul style="list-style-type: none">Impact-oriented incubators or capacity development (e.g. <i>Capital Factory</i>, <i>Education for Good</i>, <i>Impact Hub Amsterdam</i>)Impact strategy development (e.g. <i>Aquatro</i>, <i>Cultura de Impacto</i>, <i>Simanyu</i>, <i>Junxion Strategy</i>, <i>DrauHistory</i>, <i>The Change Creation</i>)	<p><i>Total Cluster Representation (19.1%)</i></p> <p><i>PDOs (14.9%)</i></p> <ul style="list-style-type: none">Legal services for PDOs (e.g. <i>Catalyst Law</i>)Marketing and design services for PDOs (e.g. <i>Pearl Street</i>, <i>Flipside Creative</i>, <i>Manoverboard</i>)Productivity software for PDOs (e.g. <i>Keela</i>)IT and digital services for PDOs (e.g. <i>Fluid IT</i>, <i>NPO Channel</i>)	<p><i>Total Cluster Representation (40.4%)</i></p> <p><i>Local Economic Development (10.6%)</i></p> <ul style="list-style-type: none">Large-scale community events (e.g. <i>Trefort Music Festival</i>)Local hiring and sourcing (e.g. <i>Oaklandish</i>)Embedding local identity in products/services (e.g. <i>MEJDI Tours</i>, <i>Oaklandish</i>, <i>Urbanspace</i>)Co-working spaces (e.g. <i>Spacecubed</i>) <p><i>Responsible Organization (25.5%)</i></p> <ul style="list-style-type: none">Living wage employer (e.g. <i>Just Move In</i>)Impact creation described primarily in terms of B Corp certification or general appeal to values (e.g. <i>Pxel Parlor</i>, <i>Human Investing</i>, <i>Adam Sluy CPA</i>, <i>BeBright</i>, <i>Betterworld Telecom</i>)	<p><i>Designed to Give (37.5%)</i></p> <p>Recognizes organizations whose operations fund charitable donations</p> <p><i>Local Involvement (18.1%)</i></p> <p>Recognizes organizations for the proportion of senior management, staff, suppliers, and customers based locally</p> <p><i>Local Economic Development (15.5%)</i></p> <p>Recognizes organizations for stated commitments to selling, hiring, and/or sourcing locally</p> <p><i>Civic Engagement & Giving (12.1%)</i></p> <p>Recognizes organizations who support employee volunteerism, and charitable giving</p>	<p><i>Influencers</i></p> <ul style="list-style-type: none"><i>Political environment:</i> Presence of trusted and effective charitable organizations within the local community<i>Political environment:</i> Characteristics of the local environment in terms of organizations, workforce <p><i>Design Decisions</i></p> <ul style="list-style-type: none"><i>Social network design:</i> Selection of philanthropic partners<i>Sourcing strategies:</i> Localization of supply chain <p><i>Building Blocks</i></p> <ul style="list-style-type: none"><i>Social capital:</i> Ongoing investments in employees' time and financial resources invested in the local community<i>Social capital:</i> Development of meaningful relationships in the community	<p>Emergent themes</p>

(continued)

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Table A1.
Summary, cluster characteristics, evidence from coding

Table A1.

Step 1 Inductive coding from websites and annual reports			
Core offerings		Target markets	
Environmentalists		Total Cluster Representation: N/A	
39.1% <i>Sustainability Products</i> (15.2%) <ul style="list-style-type: none">Products that reduce waste generation (e.g. <i>U-Konserve, GladRags, Pantys, Brand Solutions</i>)Lower-impact food products (e.g. <i>TofTurky, Back to the Roots</i>) <i>Wellness Products & Services</i> (17.4%) <ul style="list-style-type: none">Products that reduce chemical exposure (e.g. <i>Callaby, Yoni</i>)Dietary supplements (e.g. <i>Ecotrend Ecologics, Garden of Life, TallGrass</i>)Health foods (e.g. <i>Tierra Farm, Manitoba Hemp, Riverside Natural Foods</i>)	Total Cluster Representation: 60.9% <i>Sustainable Sourcing</i> (43.5%) <ul style="list-style-type: none">Fair trade practices (e.g. <i>Moyee Coffee</i>)Retail (e.g. <i>Seams to Fit, Green Libros</i>)Sustainable inputs (e.g. <i>Organic Basics, The Cheeky Panda, Genexa, 1908 Brands, Yogi Tea, TOM Organic, En Torre, Goddess Garden</i>)Retail of sustainable products (e.g. <i>EarthHero, Flora & Fauna, Eco Promotional Products, Honest to Goodness, Dream Act, Denda, Gustavo Trading, New Leaf Community Markets, Soucco</i>)		
	<i>Toxin Reduction/ Remediation</i> (26.4%) — Recognizes products/services that reduce or remediate toxins or pollution		
	<i>Resource Conservation</i> (17%) — Recognizes products/services that reduce resource use and/or limit waste to landfill		
	Design Decisions <ul style="list-style-type: none">Supplier selection criteria (including third-party certifications)		
	Physical network design: Inclusion of reverse supply chain		
	Building Blocks <ul style="list-style-type: none">Inter-firm processes: Resources invested in supplier identification, selection and development		
	Inter-firm processes: Ongoing supplier compliance		
Technology: Greener technologies			

(continued)

Customer Impact Improvers	Step 1 Inductive coding from websites and annual reports				Step 2 Coding from B impact assessment impact sub-scores B lab impact sub-scores	Step 3 Deducing supply chain design Emergent themes	
	Core offerings		Target markets				Delivery system
	<i>Total Cluster Representation (62.0%)</i> <i>Impact-Oriented Consulting (31.6%)</i> <ul style="list-style-type: none">Impact-oriented incubators or capacity development (e.g. <i>Impact Square, Mikado Consulting</i>)Impact strategy development (e.g. <i>Future Friendly, Innate Motion, iPropeller, The House, The Change Collective, Inspiring Capital, Nuova Vista, Sustainia</i>)Impact communications (e.g. <i>Hobé Hosokawa Marketing, Kin&Co, TheStoryBoxes</i>)	<i>Total Cluster Representation (15.2%)</i> <i>PDOs (10.1%)</i> <ul style="list-style-type: none">HR and recruitment for PDOs (e.g. <i>Matteria, Right Lane Consulting</i>)Legal services for PDOs (e.g. <i>s.e.e.d.</i>)Marketing and design services for PDOs (e.g. <i>Turn-Key Marketing, PWPvideo</i>)Business development for PDOs (e.g. <i>LYK Global, Natural Development</i>)IT and digital services for PDOs (e.g. <i>Adopt & Embrace</i>)	<i>Total Cluster Representation (22.8%)</i> <i>Responsible Organization (13.9%)</i> <ul style="list-style-type: none">Commitment to underrepresented groups (e.g. <i>Techstars</i>)Impact creation described primarily in terms of B Corp certification or general appeal to values (e.g. <i>River Capital, Clarius Group, CPI, August, Cricket Design Works, Collective Intelligence</i>)Local ownership (e.g. <i>Pozible</i>)Adopts environmentally friendly practices (e.g. <i>361 Degrees</i>)Philanthropy (e.g. <i>FARAD Group, Waldron</i>)	<i>Impact Improvement — Conventional Orgs. (19.7%)</i> — Recognizes organizations whose operations improve the social or environmental impacts of for-profit organizations			
					<i>Influencers</i> <ul style="list-style-type: none"><i>Industry conditions:</i> Practices employed by mainstream competitors <i>Design Decisions</i> <ul style="list-style-type: none"><i>Social network design:</i> Scope of the customer market<i>Social network design:</i> Durability of customer relationships <i>Building Blocks</i> <ul style="list-style-type: none"><i>Inter-firm processes:</i> Strong stakeholder interface capabilities<i>Inter-firm processes:</i> Develop capabilities for working with PDOs		

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Table A1.

Table A1.

Customer Access Improvers	Step 1 Inductive coding from websites and annual reports			Step 2 Coding from B impact assessment impact sub-scores B lab impact sub-scores	Step 3 Deducing supply chain design Emergent themes
	Core offerings	Target markets	Delivery system		
	Total Cluster Representation (60.2%) Impact Funding (27.9%) <ul style="list-style-type: none">• Education and training on impact investing (e.g. SVX Mexico)• ESG evaluation tools for investors (e.g. <i>Conser Invest</i>)• Impact investors (e.g. <i>Caspian Impact Investment Adviser</i>, <i>TriLinc Global</i>, <i>Closed Loop Fund</i>, <i>Anomia</i>, <i>Modern Energy</i>, <i>Boardwalk Capital Management</i>, <i>Farmland LP</i>)• Impact-oriented fundraising (e.g. <i>Steward Holdings</i>, <i>Oneplanetcrowd</i>, <i>ECrowd</i>) Impact-Oriented Consulting (16.4%) <ul style="list-style-type: none">• Impact strategy development (e.g. <i>Move Avalia</i>, <i>Impakt</i>, <i>Gridworks</i>, <i>VIANOVA</i>, <i>Blue Garnet</i>)• Impact communications (e.g. <i>Rainbow Collection</i>, <i>Vox Pop Labs</i>, <i>CAUSE</i>)• Impact-oriented incubators or capacity development (e.g. <i>Impaqto</i>, <i>Positive Ventures</i>)	Total Cluster Representation (36.1%) PDOs (13.1%) <ul style="list-style-type: none">• Financial services for PDOs (e.g. <i>Simpli</i>, <i>Ethinvest</i>, <i>Community Sector Banking</i>)• HR and recruitment for PDOs (e.g. <i>Energage</i>)• Research services for PDOs (e.g. <i>Professional Data Analysts</i>)• Services or advocacy for LGBTQIA + community (e.g. <i>Out Leadership</i>)• Services for vulnerable youth (e.g. <i>Momenta</i>)• Services for seniors or persons with disabilities (e.g. <i>Renewal Care</i>)• Services for low-income people (e.g. <i>Santa Francesca Cabrini</i>, <i>Kuza Bashara Limited</i>, <i>Vaya Finserv</i>, <i>Filao</i>)	Total Cluster Representation: N/A	Serving in need populations (38%) – Recognized organizations that who don't just serve the underserved, but serve the true bottom of the pyramid (households that earn less than \$2 per day) Impact improvement (10.2%) — Conventional Orgs. — Recognizes organizations whose operations improve the social or environmental impacts of for-profit organizations Support for underserved PDOs (10.5%) — Recognizes organizations whose work contributes to the success of PDOs	Influencers <ul style="list-style-type: none">• Political environment: Institutional voids in target market• Design Decisions• Social network design: Scope of the customer market Building Blocks <ul style="list-style-type: none">• Social capital: Intensive relationship building with beneficiaries• Social capital: Creation of supplementary services for beneficiaries

Source(s): Authors own creation

Source(s): Authors own creation

Appendix 4

Detailed results for Cluster 4 – *Internal Impact: Workers & Governance*

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Influencers

The two most dominant impact sub-scores are related to worker benefits and compensation. When an organization creates impact through the treatment of its workers, this requires an internal orientation towards social impact. However, the dominant influencers affecting how this goal is carried out by an organization are external. The most significant external influencers are government-sponsored social services offered in the area, as well as industry standards. When organizations create impact through the benefits provided to their employees, they are often addressing gaps in government services or supplementing existing government-provided benefits. These factors will affect not only the type of benefits an organization may provide for its employees, but also the cost the organization must bear to do so.

Industry standards will determine what level of compensation and/or benefits an organization needs to provide its employees to be considered going “above and beyond” its competitors. Unsurprisingly, many of the organizations who excel in the *Worker* impact area are organizations operating in white collar sectors (e.g. finance, law), where it is unlikely that any full-time employee would be paid below a living wage even by conventional organizations and where high-value benefits packages are common. Recruitment and training of new employees are both resource-intensive processes. Providing competitive compensation and benefits to employees are ways organizations can reduce these costs and avoid losing employees to competitors.

The two major *Governance* impact sub-scores related to an organization’s mission are whether that mission is protected from changes in leadership and organizational transparency. One external influencer that will impact an organization’s ability to lock its social mission into their business model is the availability of legal alternative business models in the jurisdictions in which they operate. For example, in British Columbia, organizations can be officially incorporated as a Community Contribution Company (C3). One feature of this organizational form is that it establishes a cap on dividends paid out to investors, allowing more profits to be reinvested in the organization’s mission. Similarly, Exygy is both a certified B Corp and a registered Benefit Corporation in the state of California. Benefit Corporation status, also introduced by B Lab, allows an organization to entrench the pursuit of social impact permanently in its governing documents. A significant internal influencer that will affect an organization’s ability to lock in its mission, particularly through modifications to its governing documents, is the support of key stakeholders including shareholders, employees, and directors.

Design Decisions

For an organization to create value for its workforce through benefits and compensation, the design of this overall compensation package must be carefully planned. Some organizations design their compensation packages to match or even exceed industry standards and compensation packages offered by competitors, while others introduce benefits for employees that incentivize sustainable behavior.

Another decision that is relevant for nascent organizations is facility location. The social services provided by local governments may impact which benefits are already available for employees through government programs or where minimum and/or living wage thresholds lie. Further, organizations may use characteristics of a particular community (cost-of-living, quality of life) to attract employees. Thus, government programs and community characteristics can act as influencers for the development of new benefits or compensation schemes for organizations who are not mobile or can be a factor that organizations may use to make strategic decisions about the architecture of their supply chains via facility location decisions.

A clear design decision implied by the Mission Lock impact sub-score is the selection of an appropriate business model (e.g. Benefit corporation vs Worker-owned co-op). This key decision will then have cascading implications for organizational policy, for example, HR procedures, supplier evaluation criteria, or stakeholder engagement practices.

Building Blocks

Some B Corp impact areas require investments in capabilities or relationship-building that may indirectly help an organization achieve impact. In contrast, excelling in the *Worker* impact area is directly tied to the financial resources an organization is willing to commit on an on-going basis to create additional value for their employees. Costly as they may be, these investments may be offset by increased employee commitment, retention and performance.

Finally, building stakeholder and shareholder support for an organization's mission lock initiatives requires the development of convincing communications that can help shareholders who are not already mission-aligned understand how progress towards a social mission may support the creation of long-term value. These types of activities may require investments in existing staff time, or resources devoted to hiring monitoring and evaluation specialists or consultants who can help the organization identify metrics, build data collection procedures, and prepare reports that meaningfully communicate their impact.

Corresponding author

Eugenia Rosca can be contacted at: e.rosca@rug.nl