

## ANALYSIS

## Sufficiency as a matter of care: Practices to provide for needs

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## ABSTRACT

Sufficiency can be understood as the endeavors of economic actors to fulfill needs by delivering only what is necessary. This interpretation reveals a relationship between sufficiency and care economics, as both advocate for a need-centered economy. This study demonstrates the influence and support of care on the performance of sufficiency. It is divided into two parts: (1) the development of a care framework that describes the meanings and enablers of care, and (2) the analysis of empirical data from 14 sufficiency-oriented businesses from a care perspective using the care framework. The findings indicate that from a care perspective, the world is a network of vulnerable and interconnected beings who require individuals to engage in care relationships and activities. Time, financial resources, knowledge, collaboration, technologies, and narratives are essential enablers of care and, as the findings demonstrate, contribute to the implementation of sufficiency. This study proposes a novel narrative of sufficiency as a matter of care and encourages future scholars and practitioners to understand sufficiency orientation as part of a care economy—one that fulfils the needs of society over targeting profit maximization.

## 1. Introduction

In the field of sustainability science, there is widespread consensus that one essential way of addressing the rising environmental and social crises around the world involves the reduction of material and resource consumption (Creutzig et al., 2018; Wiedmann et al., 2020). These claims are often combined with the proposal of sufficiency as a promising concept in this context. Sufficiency demands an absolute reduction of production and consumption volumes in affluent societies (Bärnthaler and Gough, 2023; Sandberg, 2021) while simultaneously ensuring that everyone's needs are satisfied (Fuchs et al., 2023; Spengler, 2016, 2018).

Sufficiency is often discussed either in terms of individual lifestyle choices or as a rather normative and abstract concept (Jungell-Michelson and Heikkurinen, 2022). There is less recognition of sufficiency as a strategy to design systems of provision, business, and economic practices (Jonas et al., 2023); the literature on sufficiency-oriented circular business models (Beyeler and Jaeger-Erben, 2022; Bocken et al., 2022; Gossen and Niessen, 2024; Niessen et al., 2023; Niessen and Bocken, 2021) constitutes a rare exception. This gap in research is significant, as sufficiency is the most fundamental principle or guideline of economic practice: managing the household of a society to balance the available resources with what is required to satisfy needs until there is

enough—nothing more, nothing less.

This study is part of a larger grounded theory (GT) process investigating the performance of sufficiency in business practices. In a previous iteration of this GT process, we observed that a reduction in production and consumption volumes occurs when business practitioners orientate their actions toward the provision of needs, which necessitates the building of careful relationships with the other actors involved in the network of production and consumption practices (Beyeler and Jaeger-Erben, 2022). Sufficiency literature highlights the importance of distinguishing human needs from superfluous consumer wants or desires (Fuchs et al., 2023; Jungell-Michelson and Heikkurinen, 2022). In line with these findings, we define the performance of sufficiency in business as a constant confrontation of the organization with needs, necessitating the alignment of business processes with these needs instead of animating unnecessary preferences. Questions such as “What are needs?” “How can they be satisfied?” “How can the business provide only for these needs?” and “How can the business decide when a sufficient level of need satisfaction has been achieved?” become essential to doing business in a sufficiency-oriented context (Beyeler and Jaeger-Erben, 2022). This definition of the performance of sufficiency is closely related to and overlapping with the claims of care economics, which places the fulfillment of needs at the center of all economic and social actions.

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Care economics provides a strong critique of the dominant neoliberal economy (Madörin, 2007; Winker, 2015), pointing to the inability of neoliberalism and capitalism to meet human needs, as the provision of needs and the reproduction of life do not generate sufficient profits (Aulenbacher, 2020; Dowling, 2021). Neoliberal market capitalism neglects care work, such as health care, education, and child and elderly care (Himmelweit, 2007). Care is often privatized to fit the capitalist mechanism, resulting in the deterioration of the quality of and access to care (Dowling, 2018; Knobloch, 2013; Knobloch and Kleinert, 2022). As an alternative, the care economy suggests that all human activities, even productive ones, must serve and provide for human needs (Winker, 2015); allocating resources and directing production toward the fulfillment of needs can help create a society in which caring for a good life for all is the central purpose of all economic activity.

Recent studies highlight the positive impact and support of care theories in sufficiency and other sustainable practices. A systematic literature review on sufficiency indicated that sufficiency is often associated with altruistic meanings and performed as an act of care (Jungell-Michelsson and Heikkurinen, 2022). A study of ethical consumption practices, such as boycotting, sharing, and buying second-hand products, argued that care can contribute to combining ethical consumption with sufficiency (Karimzadeh and Boström, 2023). Lage (2022) emphasized that one of the transformative objectives of sufficiency is to place care practices and activities at the center of society. Additional studies have combined care ethics with different concepts of sustainability, such as degrowth (Dengler et al., 2022; Dengler and Lang, 2022; Nesterova and Buch-hansen, 2023) and circular society (Calisto Friant et al., 2023; Pla-Julián and Guevara, 2019), thereby deeply rooting sustainability in the idea of intra- and intergenerational justice and attempting to repair the relationships between many subjects (Jaeger-Erben et al., 2025). Care ethics, which describes the world as relational, interdependent, and vulnerable, therefore, plays a fundamental role in socio-ecological transformation (West et al., 2020).

While sufficiency demands an orientation toward needs, the operationalization and implementation of this economic reorientation remains unclear for many practitioners and scholars. Nevertheless, care practitioners have been constantly interacting with needs, developing and putting care ethics into practice for several decades (see e.g., Mol, 2008; Mol et al., 2010; Tronto, 1993). People have always cared, and entire research fields are dedicated to theorizing the practices of care. As care and sufficiency orient activities around the fulfillment of needs, and since the performance of care in practice is well documented, this study utilizes the knowledge from care theories to better understand the performance of sufficiency. While human needs are central to both care and sufficiency, their theoretical definition and identification is not addressed in this study. However, our understanding of human needs refers to Gough (2015, 2020, 2023), who combined needs theory with sufficiency and consumption corridors. Additionally, our study presents a multidimensional understanding of needs, drawing on care ethics and science and technology studies (STS), which recognize that not only humans, but also other living beings—as well as non-living entities such as materials and technologies—can be understood to have needs (Puig de la Bellacasa, 2017).

First, in order to explore care as a theory, we summarize care and practices of care based on the existing literature, with the aim of developing a care framework for sufficiency scholars and practitioners. Building on this theory, we empirically investigate how care materializes in sufficiency practices and how it enables the performance of sufficiency in business practices. To this end, we examine the presence of care in sufficiency business practices by re-analyzing existing empirical data from 14 sufficiency-oriented businesses from our previous GT iteration, using the care framework developed in our literature analysis.

Subsequently, we first present the research design and methodology of the paper, which is followed by the description of the care framework involving the meanings and enablers of care (Section 3.1). In a second part, the findings describe how the meanings and enablers of care

influence and shape the performance of sufficiency in business practices (Section 3.2). Finally, we discuss the limitations and implications of combining sufficiency and care for future research and practice (Section 4).

## 2. Methods

### 2.1. Grounded theory approach

The grounded theory (GT) approach (Corbin and Strauss, 1990) adopted in this paper generates theoretical insights from the empirical ground by observing the unfolding of social reality (Breuer, 2010). Characterized by an iterative and cyclical approach (Strübing, 2013) and by the process of constant comparison, patterns and heuristics that emerge from the data are further assessed for heterogeneity or homogeneity with newly selected data until theoretical saturation is attained (Corbin and Strauss, 1990).

We do not present a finished GT process; rather, we include two cycles of iteration within a larger, ongoing GT research project. The larger GT project aims to deconstruct and reconstruct the phenomenon of sufficiency by exploring the realities, challenges, and possibilities with which different business practitioners experiment while operationalizing sufficiency. Different iterations of the larger GT are illustrated in Fig. 1 and described in further detail in Table 1. The larger GT project began in early 2021 with a dive into the existing sufficiency literature (*Iteration 1*). The second iteration (*Iteration 2*), published elsewhere (Beyeler and Jaeger-Erben, 2022), consisted of an empirical analysis of businesses implementing and experimenting with sufficiency-oriented strategies. One of the main results of the second iteration was the hypothesis that care is an essential characteristic of sufficiency, which supports the implementation of sufficiency in practice. However, *Iteration 2* did not consider how care influences sufficiency and its implementation in business practices, necessitating two follow-up iterations (*Iterations 3 and 4* in this study). *Iteration 3* delved into care literature, and *Iteration 4* reanalyzed the empirical data from *Iteration 2* from a care perspective. The methods employed in these two iterations are described below.

While empirical observations are necessary to develop theoretical insights in GT, theoretical data from existing literature can be useful in

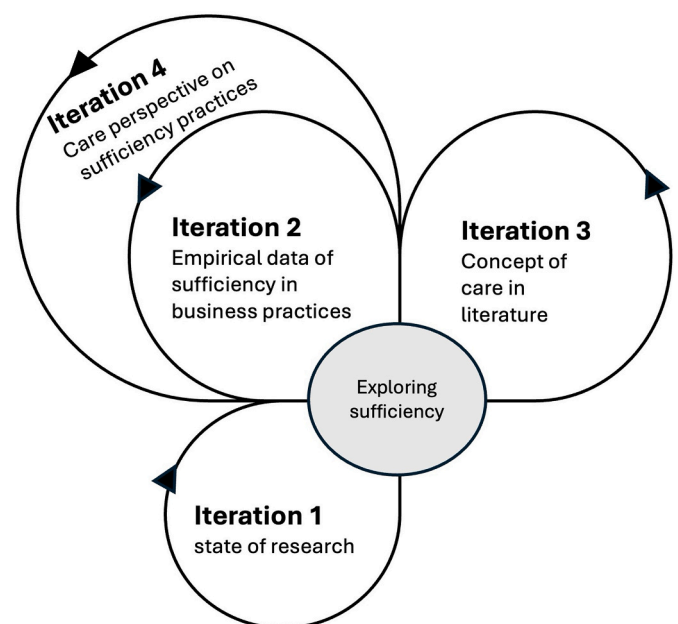


Fig. 1. Illustration of the grounded theory process in which this paper is included; *Iterations 3 and 4* are covered in this publication (own representation).

**Table 1**

The larger GT research process, with a description of each iteration cycle, including the research questions, hypotheses, and results corresponding to each iteration; *Iterations 3 and 4* are part of this study.

Iteration	Focus of the iteration	Research question	Main result
1	State of research (Beyeler and Jaeger-Erben, 2022)	What is known thus far regarding sufficiency-oriented businesses?	Overview of the existing sufficiency strategies for businesses
2	Empirical data on sufficiency in business practices: Study of 14 sufficiency-oriented businesses (Beyeler and Jaeger-Erben, 2022)	What are the characteristics of sufficiency in business practices?	Care as an important characteristic of sufficiency, influencing a rethinking of relationships Open question for future iterations: <i>How does care influence sufficiency?</i>
3	<b>Concept of care in literature: Literature review of care theories (Section 3.1)</b>	What is the meaning of care, and how does it unfold in practice?	A care framework describing the meanings of care and the elements that enable care in practice
4	<b>Care perspective on sufficiency practices: A re-dive into empirical data from Iteration 2 with a care perspective, based on the care framework from Iteration 3 (Section 3.2)</b>	What meanings and elements of care are observable in sufficiency businesses? How does care enable the performance of sufficiency?	Presence and influence of the meanings of care, such as omnipresence, relationality of care, in sufficiency-oriented business practices Performance of sufficiency enabled by various elements of care, such as time, knowledge, and financial resources

later iterations to contextualize and validate previously discovered hypotheses (Bryant and Charmaz, 2007; Cardoso Ermel et al., 2021). GT scholars often encourage researchers to return to previous data and iterations (Hensel and Glinka, 2018). The logic of discovery and validation, as well as the nonlinear and iterative nature of GT (Bryant and Charmaz, 2007), help validate and reinterpret earlier observations and discoveries. Thus, our empirical data on sufficiency-oriented business can be reanalyzed with the insights of a new theoretical strand. Care theories have rarely been combined with sufficiency research in this manner.

## 2.2. Theory grounded in literature

The first part of our analysis (*Iteration 3*) began with a dive into care literature, to synthesize the concept of care for sufficiency scholars. In line with GT approaches, this study treated care literature as empirical data for the development of a care framework (Cardoso Ermel et al., 2021). Our grounded-in-literature approach did not aim to systematically review all the existing care literature. We started with a broad search of care literature using care-related keywords across databases such as JSTOR, Web of Science, Google Scholar, and WorldCat. We also used the snowballing technique with known reviews and books. This initial phase revealed two patterns: 1) certain studies were frequently cited and appeared foundational to care literature, and 2) while care ethics first conceptualized care, other fields extended it with discipline-specific emphases. Thus, we identified five research fields—care economics, ethics of care, ecofeminism, STS, and geographies of care—each building on its own foundational literature. Through forward and backward snowballing using these foundational texts, we refined our sample until we reached theoretical sampling (Barnett-Page and Thomas, 2009). The selected literature either introduced, extended, or analyzed key aspects of the care concept. Table 1 in the Appendix details the literature included in the review.

To develop the care framework, the collected literature was inductively coded according to the different stages highlighted by Corbin and Strauss (1990): open, axial, and selective coding using the MAXQDA software. In this explorative literature analysis, we considered the meanings and enablers of care in practices as relevant theoretical categories to describe what care is and how it is performed in practice. The meanings and enablers of care are not only relevant for care practices but also as categories that may be found in sufficiency-oriented business practices. These emerging themes appeared due to our interpretation of the social from the perspective of social practice theory.

We understand the social practice to be the smallest entity of social action (Reckwitz, 2002; Schatzki, 2002). In social practices, individuals are embedded and interact with different material artefacts (Hillebrandt, 2014). Social meanings, such as symbols, values, norms, and orientations, and other resources such as skills, knowledge, and

time, lend meaning to the interactions between the bodies and the artefact and help the activities unfold (ibid.). The meanings and enablers—elements of social practices—used in this study can be defined as follows:

- **Social meanings:** These elements, such as norms, values, orientation, and narratives, contribute meaning to the performance and activities of practices (Shove et al., 2012). Social meanings provide context and sense to the actions and often orient the activities toward one or multiple common ends, such as a sufficiency orientation and the fulfillment of needs (Schatzki, 2002).
- **Enablers:** These elements are necessary for the performance of practices—for example, materials, competencies, time, and space (Shove et al., 2012). They enable the performance and connection of practices. Their absence may either reduce the quality of the performance or entirely hinder practices from taking place (Hui et al., 2016).

## 2.3. Case study selection and data collection

In the second phase, the new insights from the care literature review were used in a deductive manner for a secondary analysis of existing empirical data from sufficiency-oriented businesses (collected in *Iteration 2*). The aim of this deductive analysis was to observe how care is impacting and enabling the performance of sufficiency. The empirical data consisted of primary and secondary data from 14 sufficiency-oriented businesses in the fashion and electronics sectors, collected in 2021 and 2022. Businesses implementing sufficiency-oriented strategies and publicly communicating sufficiency and reduction purposes were selected based on theoretical sampling (Strübing, 2013). In summary, the businesses had to satisfy the following criteria:

- **Lessening strategies:** Businesses implementing sufficiency-oriented strategies in their practices were identified according to the following four “lessening strategies” of Schneidewind and Palzkill-Vorbeck (2011): decelerating (less clutter), decluttering (less speed), disentangling (less distance), and decommercializing (less market).
- **Sufficiency purpose:** A scan of the businesses’ websites, official sustainability reports, publicly available articles, and interviews in the media was performed to control for the sufficiency-oriented purpose of the business cases—for example, aiming at the reduction of consumption or production volumes.
- **Fashion and electronic sectors:** B2C businesses from both the fashion and electronic sectors, having a sufficiency orientation and applying sufficiency strategies (such as long-lasting product design and repair and reuse possibilities), were selected. Both sectors were selected because both sectors implemented similar sufficiency strategies.

**Table 2**

Description of enablers of care practices identified in the literature review.

Enabler of care practices	Description
Time	Time is required to carry out the care activities. For example, time is necessary in coordinating activities and people (Kohlen, 2018) and in waiting for the outcomes of interventions (Mol, 2008; Sevenhuijsen, 2018). Popke (2006) also highlighted that care practices have different spatial dimensions and various temporal rhythms. For example, it is difficult to impose one single productive and efficiency-driven temporality on all care practices (Puig de la Bellacasa, 2015). Cook and Trundle (2020) acknowledged the transformative aspect of care over time—e.g., over an individual's lifetime—as well as the long-term engagement required by care relationships, highlighting the amount of time that each care activity and relationship requires to achieve its goals.
Financial resources	Financial resources are essential to support and enable care activities—e.g., paying for labor or technological interventions. Due to the relational nature of care, costs cannot be reduced without a significant loss of quality of care or a deterioration in working conditions (Himmelweit, 2007). One measure called for by care economists to revalue care is a significant increase in financial resources and investment in care practices (Winker, 2015).
Knowledge	Knowledge is a fundamental resource for care practices. These practices require information about the subjects of care, their needs, and the processes to be performed (Mol, 2008). Care practices generate knowledge that provide essential insights for improvements (Morigni et al., 2020). However, theoretical knowledge must be understood in the context of the care practices. Mol (2008) criticized health care processes in which facts are blindly applied, suggesting that good care requires a thoughtful process of translating scientific knowledge into practice.
Technologies	Knowledge also includes the learning and application of essential skills and know-how for the delivery of care. Indications of useful skills for a good care process can be found in care literature (Conradi, 2015; Knobloch, 2019; Mol, 2008; Senghaas-Knobloch, 2008). For example, care relies on communication, creativity, emotional support, tenacity, adaptability to and acceptance of uncertainty, the ability to stay calm, and perseverance. Sevenhuijsen (2018) wrote about the importance of affection in care work. The list is not exhaustive, nor are all the skills always necessary to perform care activities. However, they are important features of care practices and serve care activities in many different settings.
Collaboration	Technologies support care practices and can be useful tools for meeting needs. Similar to knowledge, technologies are not neutral tools. They can intervene in bodies, nature, and ecosystems in unpredictable ways (Mol, 2008). The use of technologies requires attention to its effects and outcomes (ibid.). Care is a teamwork (Mol, 2008). The subjects involved in care relationships depend on mutual support to achieve their goals (Folbre, 2008; Knobloch, 2013). Many scholars have highlighted the importance of solidarity and collaboration between care parties (Conradi, 2015; Folbre, 2008; Knobloch, 2013, 2019; Winker, 2015). The needs of many different care subjects are best met when everyone has equal voice and is involved in the process (Dombroski et al., 2019; Tronto, 1993; Winker, 2015).
Narratives	Care practices are shaped by the discourses and narratives surrounding care (Harcourt, 2019; Mol et al., 2010). In an anthropocentric narrative, care relationships are limited and centered on human beings. The language used creates boundaries for thinking about or considering the more-than-human world and its needs (Mol et al., 2010; Puig de la Bellacasa, 2017). Experimenting with new languages can help describe the complex dynamics of care and overcome the limitations created by language that is taken for granted (Mol et al., 2010).

Hence, a comparison between the sectors was possible. As both sectors have significant negative environmental and social impacts (IRP, 2019; Niinimäki et al., 2020), practices of sufficiency are urgently required (Creutzig et al., 2022).

One interview per case was conducted with founders or employees holding strategic responsibilities ( $n = 9$ ). In cases where founders were unavailable for an interview, public podcasts with them were used as primary data ( $n = 5$ ). The podcasts were comparable to personal interviews, as they were chosen to align with the problem-centered interview guideline. The guideline, available in Table 2 in the Appendix, focused on the daily practices of the businesses along their entire supply chain, from the acquisition of resources to the consumption of goods or services, to end-of-life services. To complete and validate the data from the interviews, secondary data from websites, newsletters, blog posts, Ted talks, and sustainability reports was collected. For this study, some new data from recent podcasts, newsletters, and blog posts from the cases was added, highlighting the recent developments since the data collection in 2021 and 2022.<sup>1</sup> Table 3 in the Appendix details the 14 sufficiency-oriented businesses from the sample.

We analyzed the empirical data using the care framework developed based on the literature using a deductive process (see Section 3.1), following the axial and selective coding process of Corbin and Strauss (1990). The objective was to understand how the meaning of care was represented in the practices of sufficiency-oriented businesses as well as how care enablers supported practices of sufficiency. The realization of typical business activities such as resource acquisition, production or design, consumption support and consumer relationships, stakeholder relationship, end-of-life practices, as well as internal governance and work practices were observed for the analysis of care and sufficiency in the context of sufficiency-oriented businesses.

### 3. Results

The findings first provide the results from the literature review, summarizing the meanings and enablers of care identified in the care literature (Sections 3.1). The second part of the findings (Sections 3.2) describes how the meanings and enablers of care influence the practices of sufficiency-oriented businesses, with insights on how care can support the performance of sufficiency.

#### 3.1. Care framework

The care framework is the result of our literature review. It summarizes the common ground of care literature and is divided in two dimensions that represent the essence of all care theories: the meanings of care and the enablers of care practices.

##### 3.1.1. Meanings of care

While the care literature is diverse and has a variety of different focuses and applications, there is consensus across the literature on a few fundamental aspects of care. These aspects are present in all the studies reviewed for this research and lend meaning to the concept of care. The meanings of care can be summarized into the following four aspects:

- The vulnerable and dependent conditions of life
- The orientation toward needs
- The relationality of care
- The omnipresence of care

Care ethics highlights that the core inquiry of care theories involves the understanding and describing of the condition or nature of human beings (Lynch et al., 2021; Mol, 2008; Tronto, 1993). Care scholars describe humans as vulnerable and dependent beings (Lynch, 2009; Plonz, 2011; Tronto, 1993). Thus, they refute the ideal assumption that humans are solely rational, autonomous, and self-responsible beings (Petit, 2014). Instead, they acknowledge the diverse range of human experiences, from vulnerability and dependency to periods of autonomy, revealing the multiple and varied interdependencies present throughout

<sup>1</sup> See Beyeler and Jaeger-Erben (2022) for more details on the data collection, analysis and synthesis of the empirical data.

**Table 3**

Overview of the materialization of the meanings of care in the empirical data on sufficiency-oriented businesses.

Meaning of care	Materialization in sufficiency practices	Examples of materialization
Omnipresence of care	The prevalent lack of care for material, finite resources and environmental impact leads sufficiency practitioners to engage in sufficiency and, thus, care for neglected needs.	<b>Throwaway society</b>
		– Seeking solutions to overproduction and overconsumption in the fashion and electronic sectors
		<b>Ignorance of the Earth's physical boundaries</b>
		– Challenging the idea of infinite growth on a finite planet
Vulnerable and dependent condition of life	While they do not explicitly challenge the image of homo economicus, sufficiency practitioners recognize the vulnerability of individuals in their ecosystems and commit to supporting their needs.	<b>Neglected environment and ecosystems</b>
		– Reducing fast fashion's environmental impacts and addressing poor clothing quality
		<b>Conflating preferences with needs</b>
		– Overcoming capitalism's constant stimulation of consumer demand
Fulfillment of needs	Sufficiency in business practices prioritize goods and services that fulfill needs instead simulating unnecessary consumer wants for profit maximization. Needs are often identified with the involvement of consumers in the practices of the business.	<b>Fair working conditions for all workers and employees</b>
		– Promoting fair working conditions in material sourcing and production through alliances and advocacy
		<b>Fair prices for all consumers and income groups</b>
		– Offering a (temporary) price solidarity model to make fair fashion accessible to lower-income groups
Relationality of care	Orientation toward sufficiency and needs is only possible in relationship with others. Sufficiency in businesses relates to many different actors to implement and test sufficiency practices together.	<b>Access to jobs for all educational backgrounds</b>
		– Providing jobs and training in repair work for unemployed people
		<b>Sustainable smartphones facilitating the human need of communication and participation in society</b>
		– Offering durable smartphones with fair, sustainable sourcing, reducing the need for frequent replacement despite societal reliance on smartphones
		<b>Sharing clothing facilitating the human need to participate in different social activities</b>
		– Providing (shared) access to clothing and gear for key social activities without increasing production
		<b>Basic sustainable clothing facilitating the human need to wear daily clothing</b>
		– Producing and selling new clothing where ownership is needed due to regular use or hygiene (e.g., workwear, multifunctional sport wear, and underwear)
		<b>Repair or re-use possibilities address product vulnerabilities during the entire product lifetime</b>
		– Offering repair or re-use services to avoid new production and using existing, neglected materials
		<b>Care relationships with employees</b>
		– Investing in the well-being of employees and a culture of sufficiency within the business
		<b>Care relationship with external stakeholders</b>
		– Selecting partners aligned with sufficiency purposes, building trustful relationships with them, and caring for a long-lasting relationship with consumers beyond the point of purchase (to support the care of products or materials)
		<b>Care relationships with material and resources</b>

(continued on next page)



Table 3 (continued)

Meaning of care	Materialization in sufficiency practices	Examples of materialization
		– Carefully selecting sustainable material, investing in testing the quality and sustainability of the materials and products, and allowing the repair of products and re-use services to avoid storage of unused and neglected products and materials

human life (Keller and Kittay, 2017). Some stages of human life are more vulnerable than others—for example, the newborn and the elderly (ibid.). These stages of life require more care and attention than other, more autonomous phases. However, even in periods of greater autonomy, people are never free from care activities (Madörin, 2007). As caregivers, humans reinitiate a form of dependency and reciprocity with other, more vulnerable beings (Knobloch, 2013). Thus, by clarifying the vulnerability of human beings, care literature critiques the currently dominant economic systems, which build upon the assumption of a rational and solely autonomous homo economicus and regard vulnerability, dependency, and needs as weaknesses (Aulenbacher, 2020; Tronto, 1993). Due to the condition of vulnerability in life, care practices are particularly characterized by the purpose of needs fulfillment. Vulnerable beings have needs that must be met in order to ensure not only survival but also a good quality of life. The fulfillment of needs, in all their forms and diversity, is, thus, the goal of all care work (Mol, 2008; Tronto, 1993).

To fulfill their needs, vulnerable and dependent beings must build relationships with others (Gubitzer and Mader, 2011; Hofmeister et al., 2019). Thus, care is, at its core, a relational concept, and all actions related to care require relationships. According to Kawamura (2013), every activity that humans perform involves relationships with others, as they never work alone (ibid.). An important difference among the fields of care research lies in the agency of care, namely the question of who the subject of care is. When care practices are human centered, which is often the case in care economics, they are shaped around human needs, bodies, and activities (Baumann et al., 2013; Eisler, 2013; Schmitt et al., 2018). For ecofeminist and STS scholars, nature is an important subject of care, having its own needs and vulnerabilities while also providing essential resources for life to all living beings. Thus, care relationships and interdependencies are extended to all species and living beings (and even beyond life) and do not stop at *homo sapiens* (see e.g., Bauhardt, 2012; Bauhardt and Harcourt, 2019; Dengler, 2022; Hofmeister et al., 2019). STS scholars abandon anthropocentric views of care and describe the interdependencies between all living and non-living entities, extending the agency of care to the material world, such as products and technologies (Puig de la Bellacasa, 2017). Geographies of care advocate for care relationships that transcend the dimensions of space and time. Not only agents in geographical proximity but also subjects living in more distant places (Gibson-Graham et al., 2019) and those from future generations (Petit, 2014; Popke, 2006) are deemed worthy of care. For example, Raghuram (2016) argued for a decolonial approach to care, locating care ethics beyond the Global North and its west-centric views. Thus, care practices unfold between humans, between humans and nature, and between all living and non-living beings, across space and time (Conradi, 2015; Hofmeister et al., 2019). Some scholars describe the care and relationships that unfold between all different forms of living and non-living beings as kinship (Desai and Smith, 2018).

Care relationships are inherently asymmetrical and subject to power imbalances and abuse (Conradi, 2015; Jochimsen, 2019; Razavi, 2012). According to Jochimsen (2003), an inequality in the distribution of resources, care responsibilities, and emotional involvement, as well as individuals' different abilities to engage in care activities, can create dependencies and asymmetries in care relationships. Care economists further highlight inequalities in access to care (Aulenbacher et al., 2018a). For example, studies conducted in the United Kingdom and in the United States have demonstrated that Black, Asian, and other

minority ethnic groups faced higher risks of serious illness and early death from COVID-19 due to systemic and discriminatory factors such as economic insecurity and lack of access to health insurance (Platt and Warwick, 2020; Raifman and Raifman, 2020). At the same time, those with the least access to care services are the ones who provide the most care (D'Alessandro, 2022; Dowling, 2021). For example, time-use analyses have indicated that the time for unpaid care work is unequally distributed across genders and systematically performed by women (Bauhardt, 2019; Harcourt and Bauhardt, 2019; Ruby and Scholz, 2018). For these reasons, care scholars advocate for structures, frameworks, and policies that consider the asymmetries of care and protect vulnerable people and communities from the abuse of power and injustice (Jochimsen, 2019; Tronto, 1993). The relationality of care, thus, goes hand in hand with a consideration of the dependencies and asymmetries of the relationships and corresponding action.

Finally, the last meaning of care identified in the literature is that care is always present (Martin et al., 2015; Puig de la Bellacasa, 2017). Merely existing in this world requires care (Puig de la Bellacasa, 2017; Tronto, 1993). According to Puig de la Bellacasa (2017), an obligation to care emerges from material and affective constraints in everyday life, such as the limited material resources on a finite planet and the inability of newly born babies to survive on their own. Although there is no moral obligation to care, the constraints make care a condition of life that is always present (ibid.). Therefore, care is an ongoing process, although the work involved may be unattractive and unpleasant (Cook and Trundle, 2020; Mol, 2008; Murphy, 2015). Moreover, individuals face an excessive number of limitations and vulnerabilities on their own to be able to care for their needs themselves (Jochimsen, 2019; Kohlen, 2018), making engagement in care relationships inevitable. Scholars have observed that while care is omnipresent, it is not possible to care for everything and everyone all the time (Himmelweit, 2007; Mol, 2008). The intentional severing of relationships to make room for other relationships better equipped to meet needs is also pertinent (Pitt, 2018; Puig de la Bellacasa, 2017). An end to caregiving may be appropriated when certain needs are met or when the relationships or activities no longer serve needs (ibid.). These four aspects can be described as the fundamental characteristics of care that lend meaning to the concept of care and especially help scholars, practitioners, policy makers, and various other actors understand its foundations.

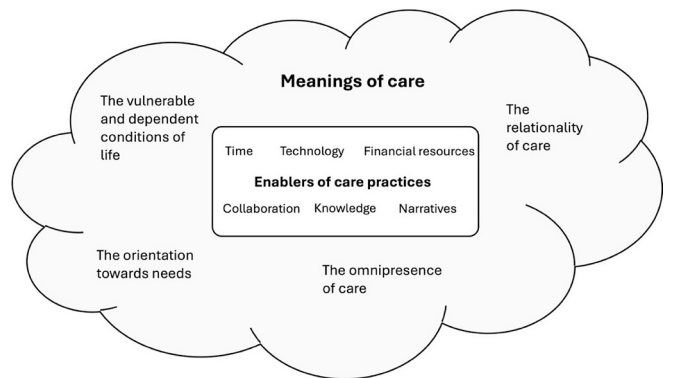


Fig. 2. Illustration of the care framework developed in this study. It illustrates the meaning and enablers of care identified in the literature and how they influence care activities by creating an atmosphere of care and enabling the activities to be performed.

### 3.1.2. Care enablers

While the meanings of care described here can be understood as the defining aspects of the concept of care, enabling an understanding of its application across research fields and practice, care has another characteristic that is described in all the literature reviewed in this study: care always leads to action (Tronto, 1993). Needs are met by engaging not only in relationships but also in activities, referred to as care work in the literature (Knobloch and Kleinert, 2022). Moriggi et al. (2020) described the materialization of care in different spaces and times through interactions, activities, and concrete practices, all of which are directed toward the same objective of fulfilling needs (Harcourt and Bauhardt, 2019). Fig. 2 illustrates how the meanings of care permeate all care practices, in the manner of an atmosphere or a logic enveloping the practices. The enablers can be found in each care practice as material or immaterial aspects that allow care activities to be performed, and the needs realized. With these two dimensions of the meanings and enablers of care, Fig. 2 presents a care framework that summarizes the most relevant aspects of care from the literature, which can be used to identify care in other practices, such as in sufficiency practices.

The performance of care practices requires a variety of agents, materials, competences, and meanings (Hui et al., 2016; Shove et al., 2012). Care scholars in the reviewed literature have described numerous different elements that enable the performance of care practices. Table 2 highlights some enablers of care practices that have been identified in the literature as relevant to the performance of care: time, knowledge, financial resources, collaboration, technologies, and narratives. The importance of these enablers becomes relevant on thinking about the absence of these elements from the care practices. Scholars have equated the absence of these enablers to a neglect of care (Mol, 2008; Puig de la Bellacasa, 2015, 2017). For example, a lack of financial resources or time impedes the quality of care activities and their ability to fulfill needs. According to care scholars, a care economy can strengthen the presence of these enablers in all economic and social practices such that they continuously support the realization of needs (Winker, 2015).

## 3.2. Sufficiency as a matter of care

The following sections present the findings from the empirical parts of the study. First, the findings describe how the meanings of care materialize in sufficiency-oriented business practices. Second, the effects of the care enablers on sufficiency in business practices are described. As mentioned in Section 2.1, these findings rely on empirical material from a previous iteration within our larger GT project (see Beyeler and Jaeger-Erben, 2022).

### 3.2.1. Meanings of care influencing sufficiency

The analysis of sufficiency in business practices from a care perspective revealed that all the meanings of care identified in the literature are present in the empirical data, although different intensities or frequencies are visible across the cases. Table 3 summarizes how the meanings of care materialize in the empirical data.

The omnipresence of care, or the fact that care does not disappear even if care work is ignored, is relevant for all the cases, as it causes sufficiency practitioners to engage in sufficiency. Sufficiency practitioners feel an obligation to repair or transform economic and ecological systems, to sustain life on Earth. Although the practitioners do not explicitly designate the lack of care as the source of their sufficiency orientation, the reasons they name always describe a neglect. For example, one interviewee questioned the quest for endless growth on a planet with finite natural resources: “We are not in a limitless environment, like in terms of resources. At some point, they won’t be any more. So, better to start using what we don’t need anymore, recycle it, refurbish it or any other re-use options” (personal interview with an anonymous outdoor brand, September 2021). Thus, their sufficiency practices emerged from the current neglect and ignorance of planetary boundaries.

While they do not explicitly challenge the image of homo economicus, some sufficiency practitioners have recognized the vulnerability of individuals in their ecosystems and develop strategies to support their needs. For example, they have addressed the struggle of the environment in recovering from pollution; the needs of workers in global supply chains, who are unable to earn a living wage; and the issues faced by consumers with limited purchasing power for sustainable options. For example, Fairphone promotes fair working conditions in material extraction (Fairphone, 2021), and Hopaal offered a long-lasting and minimalistic white T-shirt for an affordable price of €24. These actions to support, repair, and include the vulnerabilities and neglected needs of different groups or ecosystems reflect an attentiveness to life that goes beyond viewing humans as purely rational and autonomous beings.

The objective of aligning production and consumption with needs is evident in the empirical data, as noted in our previous study (Beyeler and Jaeger-Erben, 2022), and spread across all cases. Sufficiency-oriented businesses often engage in dialogs with consumers to identify needs—for example, determining which piece of clothing consumers need and what functions the piece must serve: “It is the people! They thought the sock, they thought the t-shirt, or any other product. So, we know that the product is answering a real need” (Hopaal, publicly available podcast from 2020, author’s translation). Sufficiency-oriented businesses also address post-purchase needs, maintaining relationships with consumers to respond to new needs that emerge during the product’s use phase. The needs of materials and products are equally important. Sufficiency practitioners focus on a product’s entire lifecycle, treating the product as an agent of care. They address the changing needs of materials, such as preventing defects, repairing, maintaining, and ensuring long-lasting use. From sourcing to production, repair, reuse, and end-of-life management, these practices reflect a commitment to meeting both consumer and material needs.

All the cases demonstrate that sufficiency, akin to care, is implemented in relationship with others, especially the internal relationship with employees, founders, and managers, the external relationship with stakeholders, and beyond-human relationship with materials in the form of resources or products. All of these relationships are important for sufficiency-driven businesses. Internal relationships consist of mutual support for daily work, including exchanges pertaining to creativity, problem-solving, strategic direction, decision-making, and motivation. The founders of Loom and Hopaal and the CEOs of Patagonia and VAUDE explained in the interviews how they cultivate a culture that favors well-being and happiness at work and allows employees to have time for caring activities outside the business: “We are all about ‘less but better’ [...]. We go home early, we like to be lazy, and we like to spend time not working. [...] We want that our employees have time to do their groceries, to take care of their children without having to delegate their own care work” (personal interview with Loom, June 2021, author’s translation). Trustful and purposeful relationships with external stakeholders, such as suppliers are a fundamental part of sufficiency practices. Sufficiency practitioners carefully select their partners—for example, by finding within a local perimeter suppliers who are willing to work with sustainable materials and who adhere to high social and transparency standards. Additionally, sufficiency practitioners develop a caring relationship with the materials that are used to develop a product or those that are used in services, such as repair. Materials are not merely used to develop products and sell them. Resources, technologies, designs, and transformation processes are carefully chosen to enable the products and materials to be used, reused, and repaired. The goal is to enable material and products to persist over time, and avoid products to be forgotten in basements or storage rooms (Eimterbäumer and Jaeger-Erben, 2025). This tendency is illustrated by the list of different sustainable materials tested and used by the producing companies in this study, including recycled materials, upcycled waste, ethically sourced minerals, and natural resources that are low in energy and water consumption and locally sourced. The relationality with the material world is an example of the extension of attention to needs,

vulnerabilities, and interdependencies beyond humans, which is an essential contribution of STS to the care literature (see, e.g., Atkinson-Graham et al., 2015; Puig de la Bellacasa, 2017).

### 3.2.2. Care enablers in sufficiency practices

This section outlines how the care enablers from our care framework affect or support sufficiency in business practices. Time, financial resources, and knowledge are revealed to be essential for sufficiency practices, since an absence of these elements jeopardizes the existence of sufficiency-driven businesses. Additionally, collaboration is the linking element derived from the relationality of sufficiency. Implementing sufficiency in relationship with others drives collaboration, builds solidarity, and creates communities instead of encouraging competition. Narratives of care and supportive technologies have not been clearly observed as enablers of sufficiency practices. Narratives and statements concerning the orientation toward needs are present, as needs are central to sufficiency. However, the fact that sufficiency is a matter of care is not explicit in the conversation and communication of the cases. In sufficiency practices, the technological focus is on building modular, repairable, and long-lasting products. However, it is unclear how technologies beyond reparability and modularity may be helpful for sufficiency practitioners. In the following paragraphs, we describe how time, financial resources, and knowledge shape sufficiency practices. All care enablers and their influence on sufficiency practices are summarized in Table 4.

**Table 4**

Overview of the materialization of care enablers in the empirical data on sufficiency-oriented businesses.

Care enabler	Care enablers required for sufficiency practices	Examples of how care enablers support sufficiency in practices
Time	Sufficiency, similar to care, requires time for inefficient but necessary life-sustaining activities. The time needed to develop and maintain relationships and to orient, adapt, and perform sufficiency activities cannot be reduced.	<b>Frequency:</b> Consistent and frequent exchange with stakeholders is essential. <b>Duration:</b> Time reduction is not possible in some sufficiency practices without losing significant quality or missing the goal of the practice. <b>Time limit:</b> It is necessary to accept the end of some practices—e.g., if needs are fulfilled or relationships are not working out.
Financial resources	Even if sufficiency practices generate less revenue than conventional businesses, financial means are essential to support their activities. As in the case of care practices, money is necessary—e.g., to pay employees, invest in infrastructures and technologies, and to conduct their activities.	<b>Cross-financing:</b> Sufficiency practices that generate profits are used to support other activities with no or low revenues. These practices are not discarded simply due to lower rentability. They are sustained, as they are necessary for the fulfillment of needs. <b>Lack of liquidity:</b> Some cases ceased operations due to financial constraints. For example, higher costs made repair and reuse uncompetitive with fast fashion, despite their essential role in reducing consumption. Without financial support, sufficiency practices struggle to persist.
Knowledge	Sufficiency practices, akin to care activities, rely on knowledge production, capture, and transmission in order to sustain.	<b>Transfer of knowledge between businesses and consumers:</b> It is necessary to teach consumers how to take care of products, to enable long-lasting use. <b>Scientific knowledge supporting sufficiency:</b> Scientific facts or reports from civil society help sufficiency practitioners demonstrate the need for sufficiency practices. The knowledge gathered from outside the business is a valuable tool to develop alternatives to capitalist practices. <b>Creation and sharing of knowledge from sufficiency practices:</b> By testing, improving, and spreading new practices, sufficiency practitioners create their own new knowledge and skills that are then shared with others in order to diffuse sufficiency.
Collaboration	Collaboration characterizes the care relationships mentioned above (Section 3.1). Sufficiency practitioners engage in collaborative and supportive relationships with others and often resist competition.	<b>Vocabulary used to describe and value collaboration:</b> Some words used include solidarity, friendship, open-source knowledge (sharing with others/not hiding), mutual support, and teamwork.
Narratives	A narrative of care, which links sufficiency to the meanings of care, is not explicit in the data. However, the fulfillment of needs and the necessity to care for people and the planet is part of their communication.	<b>Narratives or statements of businesses that connect sufficiency with care:</b> <ul style="list-style-type: none"> <li>Official statements emphasize that the business cares for people and the planet.</li> <li>Needs orientation entails the identification and naming of needs and questioning of consumers' desires, if they do not correspond to needs.</li> </ul> <b>Framing sufficiency as a matter of care is not an explicit narrative observed in the data.</b>
Technologies	The input and outcome of using technologies to support the performance of sufficiency remains unclear in the data.	<b>Forms of technological support observed in the data:</b> The development of modular, repairable, and long-lasting products is encouraged. <b>Not observed in the data:</b> The use of technologies beyond modularity and reparability, to support sufficiency and the fulfillment of needs—e.g., with low-tech—is not observed.

**3.2.2.1. Time.** Care scholars emphasize that care activities and the development of care relationships take time and that this time cannot be reduced for the sake of increasing productivity (Madörin, 2007). While profit orientation suppresses unproductive working time, care creates time for inefficient but necessary life-sustaining caring activities (Puig de la Bellacasa, 2015); so does sufficiency. In the process of developing products and services for the realization of needs, time is required to build and maintain relationships and to adapt sufficiency activities such that needs are met with the least possible consumption of resources, energy, and materials. Time is essential for sufficiency, as care relationships require consistency and frequent exchange and as the duration of some sufficiency activities is non-negotiable.

The high frequency of exchange between businesses and their consumers is time-consuming in sufficiency-oriented businesses. Instead of one moment of purchase and a little contact afterward, sufficiency-oriented business practices rely on frequent contact with consumers before and after the purchase. For example, the co-creative production and pre-order process of companies such as Hopaal and Shiftphone consists of the following touchpoints: consumer involvement in product design, pre-orders to limit production volumes, product delivery, and multiple feedback exchanges during and after the use phase. This frequency of exchange is ineffective in a profit-maximizing context but necessary in sufficiency practices to ensure the long-term satisfaction of needs.

Sufficiency practitioners insist that the longer duration of some of



practices is essential and that time reduction is impossible. They argue that they must take the time that they need to produce high-quality, long-lasting products or to improve their sharing or repair facilities, even if it requires, for example, multiple costly testing loops to ensure the quality of a garment. Consumers are used to waiting for their products to be designed and produced, and suppliers are welcome to prioritize quality over time pressure. The repair atelier *Bis es mir vom Leibe fällt* invested valuable time in consultations with consumers to understand their needs, issues with products, and the vulnerabilities of the material. Such consultations were crucial in avoiding mistakes and successfully fulfilling the needs of the consumers and the product.

Finally, another aspect of time that is relevant to sufficiency practices is the acceptance of or planning for an ending of activities. An activity, a strategy, or the business itself may become obsolete once needs are successfully met. For example, more sales of a product can only lead to superfluous consumption. iFixit, for example, thinks about the moment in the future when they will have sold enough screwdrivers and repair tools to the European population, such that more sales would not necessarily lead to more repairs. Hopaal reflected on the number and diversity of the products they had. In 2023, they estimated that their collections were no longer responding to consumer needs but were following superfluous consumer desires. They decided to discontinue all their collections and focus on a few multifunctional and long-lasting outdoor products (Hopaal, 2024). Although care is ongoing, some activities are temporary. Care is not only about developing connections to meet needs but also about consciously disengaging when the care activities are no longer realizing needs or when the purpose of meeting needs is doing more harm than good for the common good (Pitt, 2018; Puig de la Bellacasa, 2017).

**3.2.2.2. Financial resources.** Sufficiency practices depend on financial resources. Sufficiency-oriented activities generate less revenue than conventional businesses, for instance, because they are labor intensive, because supply chains need to be reinvented, or because the relationships that underlie all sufficiency activities require time, commitment, and energy (Himmelweit, 2007). For example, iFixit does not receive any revenue for its participation in repair roundtables and other activism activities. Moreover, care practices in sufficiency-oriented businesses have less potential for productivity gains and cost reductions, which may worsen the health of workers or the quality of the material used as well as negatively impact nature. With inferior revenue streams and less acceptance for cost efficiency, sufficiency-oriented businesses are looking for creative and sustainable sources of income that are not tied to growth imperatives and productivity logics and that can finance and secure their activities.

The data reveals a variety of financial flows circulating through and enabling different sufficiency practices. There are sufficiency practices that generate high revenues, for example, by selling goods and providing services. These lucrative practices serve as funding sources for other practices. Cross-financing is an important strategy for sufficiency-oriented businesses to transfer their practices (Beyeler and Jaeger-Erben, 2022). All sufficiency-oriented businesses in the study depend on external funding without expectations of returns from foundations, government funds, crowdfunded investments, and private investments. Thus, financial resources flow from external sources to the businesses, flourish within some practices, and are (re)invested in other low-revenue practices, within or outside the businesses. For example, the founder of the repair atelier *Bis es mir vom Leibe fällt* started the repair atelier with the income from their sustainable design label. As repair also requires education, the repair team established an educational association with the help of external income from foundations, government funds, and donations. Unfortunately, due to the COVID-19

pandemic and the high cost of repair compared to the prices of fast fashion, both the design label and repair atelier had to be closed (Bis es mir vom Leibe fällt, 2023). Since the data collection phase, three of the cases had to close due to financial constraints. Sufficiency and care practices cannot exist without financial resources to cover their costs. Sufficiency practitioners have expressed that financial resources must not go only to businesses and practices that are profitable; rather, practices without significant revenues are worthy of funding if they fulfill unmet needs.

**3.2.2.3. Knowledge.** Almost all sufficiency practitioners in the study utilize diverse media and channels to communicate relevant information and facts. Sufficiency practices in the study rely on knowledge production, capture, and transmission to sustain. For example, to support a long-lasting use, many communications between businesses and consumers include tips for the washing of clothes, instructions for maintaining the color of fabrics, or detailed instructions for repairing electronic devices. While some sufficiency practitioners use online channels such as blogs or regular newsletters, others create workshops to share instructions in person. Additionally, sufficiency practitioners gather facts, information, and know-how from outside the business—for example, from the academia and civil society. It is essential for them to present scientific facts to describe the negative impacts of conventional businesses and to explain the alternatives they offer.

Sufficiency-oriented businesses also produce their own knowledge. Knowledge and skills are created as sufficiency practices are experimented with, tested, and implemented. The knowledge is then captured by practitioners in various forms, such as text and images, and shared with others. This learning process is not only an important process observed in sufficiency practices, but also an essential part of care practices, as Moriggi et al. (2020) mentioned: “Care work becomes better when it is based on relations created through intensified involvement and knowledge [...] Offering the chance to do things differently, to do them better, this creates the conditions for transformative learning” (p.286). Sufficiency practices in business are often new, developed by the people involved in the business or replicated from existing practices but adapted to an entirely new context, region, or situation. Learning from past mistakes and from stakeholders’ feedback is essential to sufficiency. The Fairphone 5 has improved technologies and increased percentages of fairly sourced materials compared to its previous versions (Fairphone, 2023). TEIL.dein Style has adapted the practices of other sharing businesses in Germany to fit the local context in Bern and is in constant exchange with other practitioners to enhance sharing opportunities. Entire supply chains of sufficiency practitioners are openly available on their websites for others to use. iFixit’s core activity is the open-source development and sharing of repair knowledge (iFixit, 2024). For Tronto (2003), in care ethics, the past serves as a guide for future action. Repetition enables sufficiency practices to improve and overcome the challenges and ambivalences of the past.

## 4. Discussion

The literature review identified two dimensions of care: the meanings of care and the elements that enable it. The empirical results indicate that both dimensions of care are not only present in sufficiency practices but also support their implementation in businesses. The meanings of care shape sufficiency by providing orientation, motivation, and meaning, forming a logic of care that underpins sufficiency-oriented businesses.

From the care perspective, the world is a network of interconnected, vulnerable beings. To sustain life, needs must be met, through relational connections, not isolation. Despite the tendencies of neoliberalism to

ignore and weaken care activities, care is inevitable. Sufficiency practitioners experience this omnipresence of care at first hand, as they engage in sufficiency practices because conventional economic activities threaten life and neglect the vulnerabilities of people as well as nature. Sufficiency practitioners' goals are achieved through the establishment of various caring relationships—with other businesses, civil society, political leaders, employees, and the resources used throughout production and consumption. This study highlights these relationships as expressions of care, underscoring the importance of inclusive, supportive relationships in creating and advancing alternative practices.

Care enablers are essential for sufficiency in business. Time is crucial, as building and maintaining caring relationships as well as implementing new practices require more time than conventional business processes, which prioritize time and cost efficiency. Despite the lower revenues from sufficiency activities, financial resources are vital for sufficiency practices. The circulation of funding observed among sufficiency-oriented actors reflects the importance of trustful relationships with other stakeholders. Collaboration and sharing of knowledge also support the relational nature of sufficiency, enabling actors to exchange information, support one another, and build alliances for broader transformation. This study highlights indispensable elements, such as those in caring practices, which are crucial for the functioning of sufficiency. Focusing on these elements is key to supporting the performance of sufficiency in business and potentially in other institutions as well.

The findings align with the existing research on sufficiency. The relationality of sufficiency is visible in many studies, highlighting the importance of collaboration for sufficiency actors (Bocken et al., 2022; Froese et al., 2023; Maurer, 2024). Nesterova and Buch-hansen, 2023; Nesterova and Buch-Hansen, 2024 discussed the multilayered relationships sufficiency-oriented businesses experience, from their material connections to nature, the manifold of human interactions, and the formation of new social structures, to the personal values and the inner nature of the individuals involved. This study similarly highlights the range of relationships required for sufficiency and care. Viewing these relationships through a care perspective helps challenge existing asymmetries and power dynamics in the relationships, as care scholars urge for a shift beyond the human-nature duality, calling for kinship among humans, more-than-human beings, and non-living entities (Cutcher and Dale, 2023; Desai and Smith, 2018; Haraway, 2015; Puig de la Bellacasa, 2010). In this regard, future research can investigate how different communities can engage with a sufficiency-oriented business, not only in its activities but also in the ownership of the business (see e.g., Gibson-Graham et al., 2020).

The idea that sufficiency requires time is not new for sufficiency scholars. Decelerating production and business activities is one of the main strategies described in the sufficiency literature (Niessen and Bocken, 2021; Schneidewind and Palzkill-Vorbeck, 2011), where many processes from production and governance (Bocken et al., 2022) to consumption behaviors (Cooper, 2005; Sandberg, 2021) ought to be slowed down, as reflected in the literature on slow fashion, for example (Fletcher, 2010; Sarokin and Bocken, 2024). Others define implementation of sufficiency in business practices as a process, evolving over time and enabling practitioners to adapt to emerging challenges as well as external resistance (Buch-Hansen and Nesterova, 2021; Nesterova et al., 2023). Care scholars highlight the value of time for care (Cook and Trundle, 2020; Tronto, 2003). Puig de la Bellacasa (2015) emphasized the need to “make time for soil” (p.705), to allow this currently exhausted living organism to regenerate. Similarly, our findings highlight how the practices of sufficiency in business strongly depend on time as a resource as well as on structures, policies, and other actors to

accept alternative, slower temporalities, challenging the one-dimensional and linear progress of time in neoliberalism.

The importance of knowledge and money as essential resources for sufficiency has also been noted by some sufficiency scholars. Studies have described, for example, how the marketing practices of sufficiency scholars consist of sharing knowledge and skills with consumers to ensure the long-lasting use of products instead of animating consumer wants (Bocken et al., 2025; Gossen and Kropfeld, 2022). Others have demonstrated how sufficiency practitioners can utilize social media to foster sufficiency (Garcia-Ortega et al., 2024). The reliance of sufficiency-oriented businesses on external financial investments without the expectation of short-term revenues and endless growth is described by Maurer (2024) and by Kropfeld and Reichel (2024). The latter also recognized that sufficiency generates less income, as profit is not the main purpose of sufficiency practitioners (ibid.). These insights resonate with our findings on financial means and reveal that the financing of sufficiency practices, although essential, remains difficult. Future research may search for solutions on how to finance not-for-profit and potentially anti-capitalist projects without relying on capitalist growth-oriented investments.

While the existing literature highlights the same enablers of sufficiency that were described in our findings, this study urges scholars and practitioners to recognize how these enablers are not separate elements; rather, they are connected by a logic of care. Our findings suggest that care, with its essential elements, supports sufficiency in meeting fundamental needs. The novel description of sufficiency as a matter of care helps both scholars and practitioners implement sufficiency by first offering the context of a care economy as a systemic goal, moving away from capitalism, toward a society organized around care. Additionally, it helps practitioners focus not only on sufficiency-oriented business strategies but also on the essential enabling elements for these strategies. For instance, adopting a narrative of care enables businesses to more effectively establish and communicate their role in reducing production and consumption, while recognizing that they are part of a larger provisioning system that aims to meet genuine needs. Although this narrative of sufficiency as a matter of care is currently lacking in both practice and research, our findings reveal the multiple ways in which care infiltrates and shapes sufficiency practices. They demonstrate that the synergies between care and sufficiency are central for transitioning to a need-oriented economy. This approach redefines the economy as one that prioritizes care and needs over individual profit, enabling the reduction in production and consumption that sufficiency scholars and practitioners urgently demand.

The results of this study should be interpreted with caution due to some limitations. First, our care framework summarizes what is common ground within the care literature. However, it does not address ambiguities and contradictions that exist between different care scholars and research fields. For example, some scholars highlight the western bias integrated in care ethics and urge for a decolonial and global approach to care ethics, considering the perspective of the Global South with greater attention (Cook and Trundle, 2020; Raghuram, 2016). Expanding the framework to incorporate differences can offer more validity. Second, while our approach of combining theoretical and empirical iterations is unconventional, GT allows for flexibility and non-linearity in research. As the iterations presented in this study are part of a larger research investigation of the performance of sufficiency in business practices, these findings also represent only a single step in developing theoretical knowledge about sufficiency as a social phenomenon. Further research is necessary to better understand the different aspects of sufficiency—for example, the role of relationality in the acceptance and diffusion of sufficiency.

The empirical data also has limitations. While we defined the selection criteria to ensure that sufficiency strategies were present, no business fully embodies an ideal of sufficiency (see e.g., [Nesterova et al., 2023](#)). Sufficiency is a process, and the cases in our study represent different stages of its implementation—ranging from lighter to more advanced practices. Despite this diversity, the cases revealed similar realities, challenges, and solutions, allowing us to identify the key aspects of sufficiency from a care perspective. Some studies have suggested that code saturation can be reached with a small sample size in homogenous studies ([Hennink and Kaiser, 2022](#)), lending confidence to our findings. Additionally, while the selected cases aim to address needs, it remains debatable whether their products and services meet genuine needs or merely reflect preferences. To define needs as a business is complex in a capitalist context, especially in the absence of broader democratic processes to collectively define needs and appropriate satisfiers. For instance, the societal necessity of smartphones can be questioned critically, considering their social and psychological impacts. Nevertheless, in the absence of such societal orientation, companies such as Fairphone and Shiftphone, which challenge planned obsolescence, can be interpreted as responding to the currently perceived needs.

CRediT authorship contribution statement

**Laura Beyeler:** Writing – original draft, Project administration, Formal analysis, Data curation, Conceptualization, Methodology, Investigation. **Melanie Jaeger-Erben:** Writing – review & editing, Methodology, Conceptualization, Supervision.

Appendix A. Appendix<sup>2</sup>

**Table 1**  
List of care literature collected and analyzed for the care framework.

Research field related to care	Main care work in the field	Literature from the field collected through snowballing
Care Ethics	Tronto, J. C. (1993). <i>Moral Boundaries - A political Argument for an Ethic of Care</i> . Routledge.	(Conradi, 2015; Cook and Trundle, 2020; Kawamura, 2013; Keller and Kittay, 2017; Kohlen, 2018; Lynch et al., 2021; Mol et al., 2010; Petit, 2014; Sevenhuijsen, 2018; Tronto, 1999)
Care Economics	Mol, A. (2008). <i>The Logic of Care - Health and the problem of patient choice</i> Winker, G. (2015). <i>Care Revolution - Schritte in eine solidarische Gesellschaft</i> . Transcript Knobloch, U. (2019). <i>Ökonomie des Versorgens: Feministisch-kritische Wirtschaftstheorien im deutschsprachigen Raum</i> (1st ed.). Beltz/Juventa Verlag.	(Aulenbacher, 2020; Aulenbacher et al., 2018b; Aulenbacher et al., 2018c; Dowling, 2021; Dungdung, 2018; Eisler, 2012; Folbre, 2008; Gubitzer and Mader, 2011; Himmelweit, 2007; Knobloch et al., 2022; Lynch, 2009; Madörin, 2007; Plonz, 2011; Razavi, 2012; Schmitt et al., 2018; Senghaas-Knobloch, 2008)
Science and Technology Studies	Puig de la Bellacasa, M. (2017). <i>Matters of care - Speculative Ethics in More Than Human Worlds</i> . University of Minesota Press.	(D’Alessandro, 2022; Desai and Smith, 2018; Martin et al., 2015; Murphy, 2015; Pitt, 2018; Puig de la Bellacasa, 2015)
Ecofeminism	Dengler, C., Lang, M., & Seebacher, L. M. (2022). Care: An overview of strategies for social-ecological transformation in the field of care. In N. Barlow, L. Regen, N. Cadiou, E. Chertkovskay, M. Hollweg, C. Plank, M. Schulken, & V. Wolf (Eds.), <i>Degrowth &amp; Strategy. How to bring about social-ecological transformation</i> (pp. 219–234). Mayfly Books Bauhardt, C., & Harcourt, W. (2019). <i>Feminist Political Ecology and the Economics of Care: In Search of Economic Alternatives</i> (C. Bauhardt & W. Harcourt (eds.); 1st ed.). Routledge.	(Bauhardt, 2012, 2017; Curtin, 1991; Dengler, 2022; Hofmeister et al., 2019; Moriggi et al., 2020; Singh, 2019)
Geographies of care	Gibson-Graham, J. K., Cameron, J., Healy, S., & McNeill, J. (2019). Roepke Lecture in Economic Geography—Economic Geography, Manufacturing, and Ethical Action in the Anthropocene. <i>Economic Geography</i> , 95(1), 1–21. doi: <a href="https://doi.org/10.1080/00130095.2018.1538697">https://doi.org/10.1080/00130095.2018.1538697</a>	(Corwin and Gidwani, 2021; Lawson, 2007; Nguyen et al., 2017; Popke, 2006; Raghuram, 2016; Raghuram et al., 2009)

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the author(s) used DeepL Write and ChatGPT in order to improve language and readability. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

Laura Beyeler was financially supported by the PhD Scholarship program of the German Federal Environmental Foundation. The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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<sup>2</sup> Following up questions were adapted according to the cases and their main sufficiency-oriented activities (producing, selling, offering repair services) and according to hypotheses and categories that emerge during the iterative research process.

**Table 2**

Interview guideline for the empirical study of sufficiency-oriented businesses.

Questions	Following up questions
<b>1. Journey of the company:</b> Would you like to tell me your journey, from the first idea/reflection to the current situation?	<ul style="list-style-type: none"> <li>– What challenges did you or your company face in that journey?</li> <li>– How did you overcome these challenges? Did you do some consulting or trainings?</li> <li>– What role did your personal network, your education or your experience play in the journey of founding your company?</li> <li>– What is important for your company, for your brand? What is the optimal culture for your company?</li> </ul>
<b>2. Production and consumption process:</b> Could you explain to me the creation process from sourcing to consumption of your products/ your service?	<ul style="list-style-type: none"> <li>– How do you decide how many items to produce? What are your decision criteria?</li> <li>– Which characteristics does an optimal product have?</li> <li>– What challenges would you face if you would rent out your products instead of selling them? Why are not renting your clothes?</li> <li>– How do you promote your collections? What is important for the pricing of your products?</li> <li>– Where do you produce? Where do you ship your products to? Where are your consumers? E.g., not selling behind 1000 km?</li> <li>– How do you ensure that your consumers carefully use your products for the longest time possible? Do you have services for reparability or reuse? How do they work?</li> <li>– How is your relationship with your consumers and your suppliers? How would you like to increase your customer base?</li> <li>– Would you see yourself as an activist company? How important is for you to influence policies and the political system? What is your perception of your country's policy efforts to promote the Circular Economy or the European Green New Deal?</li> </ul>
<b>3. Governance:</b> Would you like to explain to me a typical work week in your company?	<ul style="list-style-type: none"> <li>– What is the optimal organizational culture for your company?</li> <li>– What is your opinion on flexible working hours?</li> <li>– Where does your capital come from? What are specific challenges and strengths related to the source of your capital investment and your shareholders?</li> </ul>
<b>4. Growth:</b> How/where do you see your company in 5 or 10 years from now? Which aspects are important for the evolution of your company?	<ul style="list-style-type: none"> <li>– What does growth mean for you?</li> <li>– How do you wish your company to grow?</li> <li>– How would you like your innovative business practices to be spread in society or in the economy?</li> </ul>

**Table 3**List of the sufficiency-oriented businesses selected for the empirical study (source [Beyeler and Jaeger-Erben, 2022](#)).

Company	Sector	Description	Data collected (primary and secondary data)
Hopaal	Fashion	Activity: Producer of long-lasting and sustainable clothing Located in: Biarritz, France Size: < 10 employees	<b>Primary data:</b> Public podcast with the co-founder and CEO <b>Secondary data:</b> Website, newsletters, blog posts
Loom	Fashion	Activity: Producer of long-lasting and sustainable clothing Located in: Paris, France Size: < 10 employees	<b>Primary data:</b> Interview with the CEO <b>Secondary data:</b> Website, newsletters, blog posts, Ted talk
Fairphone	Electronics	Activity: Producer of fairer and modular smartphones Located in: Amsterdam, The Netherlands Size: < 500 employees	<b>Primary data:</b> Interview with the circular material innovator <b>Secondary material:</b> Website, blog posts
Shiftphone	Electronics	Activity: Producer of modular smartphones Located in: Falkenberg, Germany Size: <50 employees	<b>Primary data:</b> Interview with the CEO <b>Secondary material:</b> Website, blog posts
Patagonia EU	Fashion	Activity: Producer of sustainable and long-lasting outdoor clothing and gear Located in: Amsterdam, The Netherlands Size: > 500 employees	<b>Primary data:</b> Public podcast with the CEO <b>Secondary data:</b> Press article, social and environmental responsibility website
VAUDE	Fashion	Activity: Producer of sustainable and long-lasting outdoor clothing and gear Located in: Tettngang, Germany Size: >500 employees	<b>Primary data:</b> Public podcast with the CEO <b>Secondary data:</b> Website, sustainability report 2020
TEIL.dein Style	Fashion	Activity: Renting of secondhand clothing Located in: Bern, Switzerland Size: <10 employees (volunteers) Sector: Fashion	<b>Primary data:</b> Interview with the head of innovation and network and co-founder <b>Secondary data:</b> Website
Palanta	Fashion	Activity: Online renting of fair and sustainable clothing Located in: Amsterdam, The Netherlands Size: <10 employees (volunteers)	<b>Primary data:</b> Interview with the CEO and co-founder <b>Secondary data:</b> Website, blog posts
AlderNativ	Electronics	Activity: Distribution of sustainable smartphones, pilot project of renting smartphones Located in: Bern, Switzerland Size: <10 employees	<b>Primary data:</b> interview with the head of operation <b>Secondary data:</b> Website
Outdoor brand (anonymous)	Fashion	Activity: Producers of sports and outdoor clothing, pilot project of renting outdoor gear Located in: n/a Size: >500 employees	<b>Primary data:</b> Interview with director of business development <b>Secondary data:</b> Renting website, sustainability report 2021
Unown	Fashion	Sector: Fashion Activity: Online renting of fair and sustainable clothing	<b>Primary data:</b> Public podcast with co-founder <b>Secondary data:</b> Website, blog posts

(continued on next page)



Table 3 (continued)

Company	Sector	Description	Data collected (primary and secondary data)
Bis es mir vom Leibe fällt	Fashion	Located in: Hamburg, Germany Size: <50 employees Activity: Repair service for clothing and textiles; repair education	<b>Primary data:</b> Interview with founder <b>Secondary data:</b> Website, economy for the common good report
IFixit EU	Electronics	Located in: Berlin, Germany Size: <10 employees Activity: Free and community-based platform with repair instructions; producer of repair tools	<b>Primary data:</b> Interview with CEO <b>Secondary data:</b> Website, repair manifesto, blog posts
R.U.S.Z	Electronics	Located in: Berlin, Germany Size: <100 employees Sector: Electronics Activity: Repair services and competences for electronic home appliances	<b>Primary data:</b> Interview with founder <b>Secondary data:</b> Website, blog posts
		Located in: Vienna, Austria Size: n/a	

## Data availability

Data will be made available on request.

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