But What Does Sustainability Mean? The Groundwork for Knowledge About Sustainability and Knowledge for Sustainability

CHAPTER 8

BUT WHAT DOES SUSTAINABILITY MEAN? THE GROUNDWORK FOR KNOWLEDGE *ABOUT* SUSTAINABILITY AND KNOWLEDGE *FOR* SUSTAINABILITY

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ABSTRACT

Sustainable management requires companies to build up new knowledge to acquire the competencies needed for action. This chapter aims to deliver knowledge about *sustainability and knowledge* for *sustainability. Firstly, we systematically analyse the sustainability literature in the social sciences through a bibliographic analysis and topic modelling using VOSviewer and Mallet software. We outline research directions, themes and critical contributions for each research cluster identified. Additionally, we categorise over 30 definitions of sustainability identified by Meuer, Koelbel, and Hoffmann (2020). Secondly, we enumerate knowledge types needed for effective sustainability transitions of organisations. Wet trace typologies of sustainable business models and their distinct evaluations of sustainability. In this chapter, we argue that integrating the triad social, ecological and economic goals is central for sustainability attempts as well as long-term thinking. Therefore, our research offers a comprehensive overview of sustainability in the social sciences supporting researchers and practitioners to navigate this miscellaneous and scattered field. Accordingly, our study is precious to young scholars*

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researching sustainability who want to use the term in an informed and meaningful way.

Keywords: Sustainability; sustainable management; competencies; knowledge; corporate social responsibility; systematic review

1. INTRODUCTION

Due to the climate crisis, sustainability has become a social and political imperative that companies must address to succeed. Economic considerations have to take into account limitations of natural resources, as well as human working and living conditions. The interdependence of these three areas is crucial, as there can be no profit on a dead planet. Neither is economic profit possible without human involvement. Consequently, actors aiming for success should not perceive sustainability as a source of exogenous costs but rather as a strategic opportunity that can be exploited (Lubin & Esty, 2010; Porter & Kramer, 2011).

The importance of the sustainability imperative has increased significantly in the last decade, both politically and socially. The sustainable development goals (SDGs) of the United Nations, which were published in 2015 (Hák et al., 2016), as well as the 'Green Deal' (European Commission, 2022)[1] demonstrate, among other initiatives, the political centrality of the issue. The European community focuses on environmental and social sustainability in their efforts to become the first climate-neutral continent. Furthermore, figures from a recent market study by McKinsey and Company (2021, p. 89f) indicate that consumers are showing an increased awareness for sustainability in their purchasing behaviour. As a result, social expectations towards organisations and companies to act sustainably are intensifying.

But what does sustainability mean? Sustainability is an abstract concept. Sometimes it is a buzzword rather than a meaningful concept. It is viewed inconsistently, as Grunert, Hieke, & Wills have shown (2014, p. 183). However, their results indicate that sustainability is generally more associated with environmental issues (e.g., 'environmental impact of use of land and water, environmental impact of food production') rather than ethical issues (e.g., 'working conditions in food, child labour in food, world food supply'). Interestingly, the authors claim that linguistic-cultural differences exist internationally in translating the concept. While in Germany, France, Spain and the United Kingdom, the term sustainability is primarily associated with 'environmental protection', most respondents in Poland associated it with 'maintaining the standard of living', and in Sweden (for linguistic reasons), a temporal dimension (e.g. the shelf life of products) is associated with it. Consequently, we aim to address this diversity of perceptions by mapping the social science sustainability research field.

We intent to answer the following question: *What knowledge is necessary to implement sustainability principles in practice?* In the process of providing a

[1]Proclaimed by the European Commission at the end of 2019 (Ossewaarde and Ossewaarde-Lowtoo, 2020).

systematic response to it, the paper differentiates knowledge *about* sustainability and knowledge *for* sustainability. The former refers to dimensions and definitions to an overall understanding crucial for sustainable management research and practices. Their basic assumptions are situated in dominant or green growth framings (Grill, 2021). These framings of sustainability argue that (more) sustainable business practices are possible without radical change. The latter is increasingly important for building new knowledge and competencies to act sustainably.

2. KNOWLEDGE ABOUT SUSTAINABILITY

In order to gain what we coin 'knowledge *about* sustainability' in different social science disciplines, this chapter examines several concepts and definitions and maps the field. It does not, however, critically discuss their epistemological and ontological assumptions that might be incompatible. First, the chronological development of the concept is traced along major contributions. Then, a broad literature review identifies distinct research directions and contributions representative of the respective research direction (and themes). Additionally, based on a recent literature review by Meuer, Koelbel, and Hoffmann (2020), we identify characteristic patterns in definitions of corporate sustainability.

2.1 Central Concepts and Definitions

The idea of sustainability can be found very early in the work of Hans Carl von Carlowitz, who advocated sustainable resource use ('Nachhaltende Nutzung', cited in Gottschlich & Friedrich (2014, p. 25)) and made this a principle of forestry action: more forest should grow back than wood is consumed. To ensure this ratio, he described three ways: reduction of wood consumption, substitution by other materials and controlled reforestation (in Gottschlich & Friedrich (2014, p. 25)). If consumption remains below the natural regeneration capacity, the long-term usability of wood can be ensured. While this does not maximise profit in the short term, it avoids shortages and the associated social and economic consequences in the long term (Grober (2001) in Reidegeld (2014)).

In their report 'The Limits to Growth', Meadows et al. (1972) showed already in 1972 by computer simulations that with then (!) continuing growth of population, production, resource use and pollution the natural absorption capacity of the earth would be exceeded within 100 years. In subsequent updates of the report and its data basis (1992, 2004, 2012, 2020), the forecasts in this regard became gloomier, and a recent study (Herrington, 2021) empirically corroborated. This empirical data suggests a slowdown and eventual stalling of growth (welfare, food and industrial production) within the next decade. To counter this trend, Meadows, Randers, and Meadows (2005, p. 259f) propose 'general guidelines for restructuring any system toward sustainability' (e.g., households, businesses, economies):

- 'Extend the planning horizon': decisions should be made based on long-term cost and benefit estimates rather than short-term expectations.
- 'Improve the signals': What constitutes prosperity and how can it best be measured? Environmental and social costs should be included in the analysis.
- 'Speed up response times': Negative social and environmental developments should be recognised or anticipated early so that technological and institutional changes can counteract them. Flexibility, creativity, critical and systemic thinking, and the necessary will to change are crucial.
- 'Minimize the use of nonrenewable resources'
- 'Prevent the erosion of renewable resources'
- 'Use all resources with maximum efficiency'
- 'Slow and eventually stop exponential growth of population and physical capital'

Another milestone in the sustainability discourse is the UN report 'Our common future', published in 1987 and commonly known as the 'Brundtland Report' (named after the then chairwoman of the relevant UN commission and Norwegian prime minister) (United Nations, 1987). This report defines sustainable development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. Essential in this definition is the concept of needs and the orientation towards the future. Basic needs enjoy priority, and needs beyond that are subject to the limits of ecological (regeneration) capacities (United Nations, 1987, chap. 2/I).

The 'Triple Bottom Line, 3Ps - People, Planet, Profit' model (Elkington, 1997) or 'three pillars model' (Deutscher Bundestag, 1998) present an alternative view of the concept of sustainability. They reflect the target variables of sustainable development that must be balanced: economic prosperity, environmental quality and social Justice (Elkington, 1997). The Enquete Commission of the German Bundestag (1998, p. 18, translated) emphasises that 'sustainability policy [is] to be interpreted as social policy that, in principle and in the long term, treats all of the aforementioned dimensions [ecological, economic and social goals] on an equal footing and with equal value'. However, politics must recognise 'that economic development and thus social welfare are only possible to the extent that nature as the basis of life is not endangered'.

In 2000, the United Nations adopted the Millennium Development Goals (MDGs). The original eight SDGs, which were to be achieved by 2015, were replaced in 2015 by the 17 SDGs (Hák et al., 2016). In these 17 target areas (concretised in 169 sub-targets and 303 indicators), it is evident that sustainability has become a global issue (Sachs, 2012). However, precisely this 'breadth' led to the SDGs being regarded by some as 'vague, weak, or meaningless' (Holden et al., 2017, p. 213).

So far, the perspectives on sustainability and sustainable development originate primarily from a macro perspective – one of the most prominent approaches (Wieland, 2017). Michael Porter and Mark Kramer (2006, 2011) prominently transfer sustainability to the micro-level of business. Based on the insight that

companies and their social and ecological environment are interdependent, the authors argue that value creation must be viewed more holistically and understood beyond the exclusive pursuit of profit. Thus, long-term success factors, such as customer needs, social impact, ecological resources management and supplier relationship quality, are considered and addressed. They define their idea of 'Creating Shared Value' (CSV) as 'policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates' (Porter & Kramer, 2011, p. 66). CSV can be seen as an evolution of 'corporate social responsibility' and states that corporate sensitivity to the social and environmental environment is not philanthropy (i.e., costs that reduce profitability) but a source of growth and innovation. Satisfying social and environmental needs both opens new markets and secures companies' strategic resources in the long term (e.g., well-trained employees and steady consumption). It is, therefore, a matter of combining sustainable and responsible action with the achievement of economic success. Nevertheless, Porter and Kramer's win-win perspective has been questioned. Crane, Palazzo, Spence, and Matten (2014) criticise the concept of CSV as 'wishful thinking' because it fundamentally fails to recognise tensions between social, environmental and economic goals. Furthermore, Dembek, Singh, and Bhakoo (2016) argue that the concept is vague and that it resembles a 'management buzzword' that needs concretisation (e.g., by focussing on common needs; cf. Kragulj, 2023).

2.2 Methods and Results of Bibliographic Analysis and Topic Modelling

In this section, we analyse the current discourse on sustainability. We identify distinct research directions/themes research strands on sustainability in the social sciences (Safón & Docampo, 2020) and point to central contributions that are representative of the respective research direction (and themes). To this end, we adopted a two-stage mixed-methods approach, combining bibliographic analysis and topic modelling based on natural language processing. The bibliographic analysis identified research clusters based on bibliographic data. The subsequent topic modelling approach detected common themes within a given text data set (i.e., abstracts of articles).

In July 2021, we searched in the *Web of Science* database for publications on sustainability that were listed in the SSCI-index. We chose all social science articles published between 2010 and 2020. Accordingly, our inclusion criteria were that 'sustainability' was mentioned either in the title, abstract, or as a keyword of the articles. Moreover, we only restricted the search to English language papers and social sciences. The search resulted in 19,291 records. We analysed this large sample iteratively in two steps.

a. Firstly, we started with the *identification of research directions.* In order to make sense of the interrelations and cross-citations between all the papers in our sample we conducted a bibliographic analysis. This technique assumes that articles that refer to the same sources are similar in terms of content and

thus belong to a common research direction or 'cluster', how we named them. Clusters are thus created by statistical correlations of the sources used for current contributions. More specifically, we conducted a bibliographic coupling analysis with the software VOSviewer 1.6.16 (van Eck & Waltman, 2010). In this way, we mapped the current state of the research landscape on sustainability-related social science research in eight clusters.

b. Building on that groundwork*, we identified themes per research direction.* Within each of our clusters, we discovered three distinct themes. Towards that end, we used an algorithm for topic clustering analysis, specifically the software Mallet 2.0.8 (Graham et al., 2012; McCallum, 2002). It analysed the abstracts of all papers per cluster automatically and examined for their similarity. The more words two contributions had in common in their abstract, the more 'related in content' they are according to this logic. Furthermore, the more frequently terms were detected (signal words), the more characteristic they were for the topic. This second step enabled us to dive deeper into the keywords and content of the respective clusters.

Fig. 8.1 shows the eight identified clusters represented by different colours. It is the outcome of our first step, the bibliographic analysis. The circles symbolise the papers belonging to the respective cluster (common colour). The size of these circles reflects how often an article has been cited, and their position reflects the interconnectedness with other cluster sources.

Table 8.1 lists and describes the eight research directions (clusters) that resulted from the bibliographic analysis. We assigned the respective names and

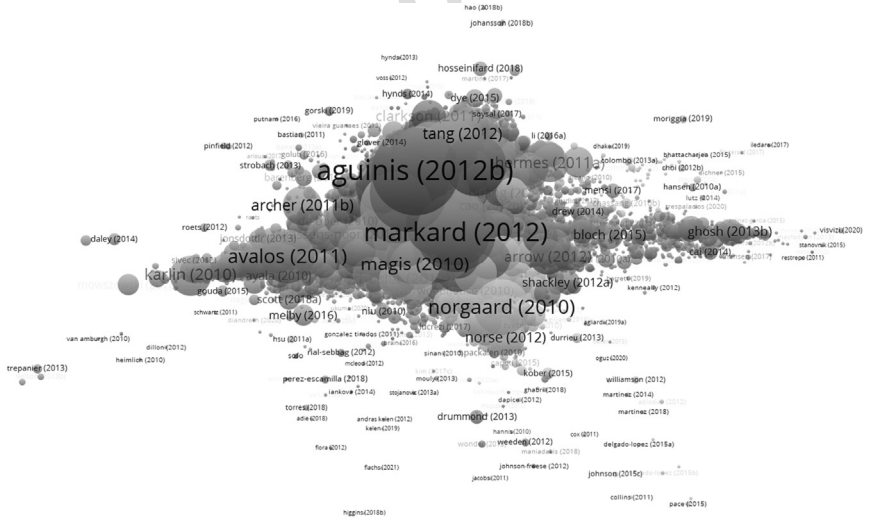

Fig. 8.1. Cluster Analysis of Sustainability Papers (Bibliographic Coupling in VOSviewer 1.6.16).

Table 8.1. Research Directions (Clusters), Themes (Signal Words) and Representative Contributions.

Research Direction (Cluster)	Description	Descriptive Signal Words of the Three Themes per Cluster	Top Three Articles per Theme
1. CSR, stakeholder management and sustainability *Red* in Fig. 8.1	The top articles in this cluster were mainly published in management journals and thus represent a business perspective on 'sustainability'. CSR (corporate social responsibility) often appears as a keyword. The article by Aguinis and Glavas (2012), a literature review concerning CSR, is the most cited one in our selection.	CSR, corporate, firms, companies, performance, environmental, reporting, social, financial, disclosure, reports, responsibility, assurance, find, governance, market, stakeholder, firm, countries, quality Business, social, accounting, development, corporate, practice, stakeholders, systems, case, change, future, authors, understanding, field, challenges, review, institutional, society, local, public Environmental, organisational, green, innovation, practices, organisations, performance, social, employees, managers, role, environment, knowledge, development, business, leadership, resources, implementation, support, orientation	Cheng and Serafeim (2014), *Strategic Management Journal*; Eccles and Serafeim (2014), *Management Science*; Schaltegger et al. (2016), *Organization and Environment* Smith and Lewis (2011), *Academy of Management Review*; Doherty et al. (2014) and Adams et al. (2016), *International Journal of Management Reviews* Aguinis and Glavas (2012), *Journal of Management*; Schaltegger and Wagner (2011), *Business Strategy and the Environment*; Van Dierndonck (2011), *Journal of Management*
2. Sustainability transitions (policy) *Green* in Fig. 8.1	Contributions in this research direction go beyond purely descriptive analyses and deal normatively with how the transition to more sustainable forms of economy and society can succeed. Most assume that the economy is embedded in society and the environment. Measures for change towards greater sustainability are examined based on central topics such as mobility, energy and innovation.	Urban, system, transport, policy, development, systems, public, future, indicators, planning, city, performance, assessment, case, areas, social, time, policies, potential, cities Energy, economic, environmental, growth, development, countries, policy, policies, renewable, production, emissions, capital, resources, consumption, water, sector, green, power, electricity, resource Social, policy, change, innovation, environmental, development, climate, political, governance, local, transition, knowledge, transitions, challenges,	Egbue and Long (2012), *Energy Policy*; Greco et al. (2019), *Social Indicators Research*; Kivimaa and Kern (2016), *Research Policy* Geels et al. (2016), *Research Policy*; Zhang and Anadon (2014), *Ecological Economics*; Arrow et al. (2012), *Environment and Development Economics* Markard et al. (2012), *Research Policy*; Martin (2016), *Ecological Economics*; Smith (2012), *Research Policy*

(Continued)

Table 8.1. *(Continued)*

Research Direction (Cluster)	Description	Descriptive Signal Words of the Three Themes per Cluster	Top Three Articles per Theme
		ecological, public, actors, systems, role, community	
3. Health, education and economic analysis *Blue* in Fig. 8.1	Sustainability in this cluster refers primarily to the time dimension, in the sense of 'in the long term'. Accordingly, articles from scientific journals in the fields of health and education are found here. From a 'global health' perspective, these issues are relevant to sustainability research: Health is not only the absence of disease, but also a socioeconomic factor. Moreover, the effects of climate change are addressed.	Education, social, development, policy, environmental, systems, change, community, global, economic, critical, role, practices, challenges, nature, public, work, educational, ways, local	Watermeyer et al. (2021), *Higher Education*; Gonzales (2016), *Information Communication & Society*; Helsper (2012), *Communication Theory*
		Students, education, learning, development, university, higher, teachers, environmental, knowledge, universities, teaching, design, curriculum, student, institutions, design/methodology/approach, originality/value, engineering, practical, change	Avalos (2011), *Teaching and Teacher Education*; Rickmann (2012), *Futures*; Brundiers et al. (2010), *International Journal of Sustainability in Higher Education*
		Health, implementation, programme, intervention, care, support, school, community, programs, training, schools, interventions, outcomes, children, services, quality, treatment, practice, years, clinical	Panter-Brick et al. (2014), *Journal of Child Psychology and Psychiatry*; Karlin et al. (2010), *Journal of Traumatic Stress*; Van Doren et al. (2019), *European Child & Adolescent Psychiatry*
4. Green supply chain management and technology *Yellow* in Fig. 8.1	This cluster includes research on logistics topics such as the sustainable design of supply chains and production technologies. A focus of the third sub-cluster is also on the concept of the circular economy. This is an economic concept in which the use of new materials and resources as well as energy and waste should be minimised as much as possible; using products and materials for as long as possible promotes regenerative natural systems.	Supply, chain, performance, environmental, practices, green, social, firms, chains, supplier, suppliers, companies, logistics, managers, role, manufacturing, design/methodology/approach, firm, corporate, case	Hong and Guo (2019), *Omega-International Journal of Management Science*; Kamble et al. (2020), *International Journal of Production Research*; Green et al. (2012), *Supply Chain Management – An International Journal*
		Environmental, efficiency, economic, production, energy, performance, financial, cost, policy, products, product, emissions, show, waste, costs, transportation, proposed, carbon, problem, decisions	Chaabane et al. (2012), *International Journal of Production Economics*; Sueyoshi et al. (2017), *Energy Economics*; Gebler et al. (2014), *Energy Policy*
		Development, business, industry, future, review, project, identify, identified, social, challenges, systems, key, manufacturing,	Korhonen et al. (2018), *Ecological Economics*; Saberi et al. (2019), *International*

		construction, barriers, proposed, economy, implementation, projects, circular	*Journal of Production Research*; Murray et al. (2017), *Journal of Business Ethics*
5. Environmental Ecosystem Services *Purple* in Fig. 8.1	Based on the fundamental need for a healthy ecosystem that ensures the survival of humanity, the top articles in this cluster deal with the preservation of the natural environment. The approach to sustainability is mostly a holistic one. In particular, the cluster addresses topics such as maritime ecosystems and fisheries as well as agriculture and their potential for improvement for sustainable food security is highlighted. Accordingly, problems related to land use are also an important topic.	Fisheries, fishing, marine, resources, economic, fishery, resource, conservation, communities, ecosystem, ecological, fish, species, coastal, areas, stakeholders, policy, fishermen, natural, local	Singh et al. (2018), *Marine Policy*; Long et al. (2015), *Marine Policy*; Farley and Constanza (2010), *Ecological Economics*
		Governance, food, social, policy, global, environmental, development, local, systems, case, public, private, system, international, challenges, actors, change, institutional, political, role	Norgaard (2010), *Ecological Economics*; Magis (2010), *Society & Natural Resources*; Bene et al. (2019), *World Development*
		Production, forest, farmers, land, agricultural, water, economic, market, rural, environmental, show, countries, certification, markets, products, producers, higher, supply, b.v, food	Harvey and Pilgrim (2011), *Food Policy*; Powlson et al. (2011), *Food Policy*; Aker (2011), *Agricultural Economics*
6. Green consumption marketing *Turquoise* in Fig. 8.1	This research cluster focuses on the psychology of individual consumption decisions and sustainable marketing. For example, the labelling of sustainable products in the food sector is being researched. Or practices of the 'sharing economy' are considered, including the motivations underlying these practices and their implications for new service business models.	Food, consumption, environmental, behaviour, energy, change, health, pro-environmental, participants, behaviour, meat, waste, students, behaviours, water, attitudes, environment, norms, climate, production	Gifford (2011), *American Psychologist*; Garnett (2011), *Food Policy*; Banjaafar et al. (2019), *Management Science*
		Consumers, consumer, green, products, environmental, product, perceived, social, purchase, brand, ethical, fashion, intention, intentions, perceptions, attributes, organic, choice, quality, behaviour	Paul et al. (2016), *Journal of Retailing and Consumer Services*; Grunert et al. (2014), *Food Policy*; Peloza and Shang (2011), *Journal of the Academy of Marketing Science*
		Social, marketing, practices, sharing, consumption, development, service, public, community, future, practice, economic, business, economy, users, knowledge, systems, system, key, understanding	Hamari et al. (2016), *Journal of the Association for Information Science and Technology*; Vargo and Lusch (2017), *International Journal of Research in Marketing*; Cheng (2016), *International Journal of Hospitality Management*
	The thematic focus of this cluster is on sustainable tourism.	Tourism, development, social, local, community, economic, stakeholders,	Bornhorst et al. (2010), *Tourism Management*; Gonzalez et al. (2018),

(Continued)

Table 8.1. *(Continued)*

Research Direction (Cluster)	Description	Descriptive Signal Words of the Three Themes per Cluster	Top Three Articles per Theme
7. Sustainable tourism *Orange* in Fig. 8.1	For example, the environmental impact of tourism is examined. Papers in this cluster investigate 'over tourism' and its social impacts from the perspective of the local population. They analyse mechanisms of tourism. The shock induced by the COVID-19 pandemic is already addressed by some articles.	communities, cultural, rural, destination, interviews, growth, heritage, governance, planning, destinations, case, knowledge, policy	*Tourism Review*; Bramwell (2011), *Journal of Sustainable Tourism*
		Tourists, environmental, tourist, destination, residents, economic, destinations, tourism, visitors, indicators, marketing, quality, ecotourism, perceptions, perceived, importance, experience, activities, hotel, performance	Tian *et al.* (2020), *Technological and Economic Development of the Economy*; Lee and Jan (2019), *Tourism Management*; Ramkissoon et al. (2013), *Tourism Management*
		Industry, change, tourism, practices, climate, future, environmental, global, events, business, potential, sector, hospitality, sport, water, critical, travel, systems, policy, related	Hall et al. (2020), *Tourism Geographies*; Seraphin et al. (2018), *Journal of Destination Marketing & Management*; Jiang and Wen (2020), *International Journal of Contemporary Hospitality Management*
8. Innovative financial and fiscal development *Brown* in Fig. 8.1	While the most cited articles in the first two thematic sub-clusters (topics) deal with the sustainable (in the sense of long-term) development of economic topics such as taxes and debt, the focus in this cluster is otherwise more on the area of environmental sustainability. Topics include, for example, the substitution of fossil fuels or renewable energy consumption	Fiscal, debt, countries, public, policy, government, rate, crisis, account, ratio, tax, budget, show, GDP, interest, monetary, deficit, rates, risk, find	Elliot (2011), *MIS Quarterly*; Ghosh et al. (2013), *Economic Journal*; Baum et al. (2013), *Journal of International Money and Finance*
		Pension, financial, system, social, health, policy, public, welfare, political, population, state, local, economic, reform, care, reforms, government, long-term, retirement, policies	Van Barneveld et al. (2020), *Economic and Labour Relations Review*; Faguet (2013), *World Development*; Bonsang et al. (2012), *Journal of Health Economics*
		Growth, economic, countries, development, energy, income, consumption, capital, environmental, investment, period, panel, economy, global, evidence, price, time, financial, significant, market	Saint Akadiri et al. (2019), *Energy Policy*; Asongu et al. (2018), *Technological Forecasting and Social Change*; Bloch et al. (2015), *Economic Modelling*

Note: Figure in colours for the digital version.

descriptions in columns one and two on the basis of their qualitative content, of the mostly cited papers. This mapping provides an overview of research directions of sustainability. Within each cluster, we present three research themes detailing the respective cluster. They are described by their characteristic signal words resulting from the topic modelling analysis. Furthermore, we list three articles representative of each theme within a cluster (research direction). According to the *Web of Science* database, these articles were most frequently cited by others (relative citations per year). In other words, the signal words and the top three articles in columns three and four of Table 8.1 are the results of our topic modelling analysis.

2.3 Overview of Corporate Sustainability Definitions and Content Patterns

In the following, we take a closer look at definitions of corporate sustainability. Meuer, Koelbel, and Hoffmann (2020) identified 33 different definitions of 'corporate sustainability'. We examined these definition for recurring content patterns. Our results are shown in Table 8.2. Supported by these results, we recognise some recurrent patterns that might be characteristic of a business perspective on the sustainability concept:

a. The differentiation into three sustainability dimensions – 'People, Planet, Profit' ('3 Ps') – is found in (more than) three out of four definitions. However, the most frequent explicit reference in this sample (88%) is to the social dimension of sustainability.
b. Most definitions aim to integrate the three sustainability dimensions or the related value creation. Only two definitions describe corporate sustainability as the active reduction of the negative consequences of corporate action (mitigation).
c. However, it is also evident that some definitions (24%) place one 'P' in the foreground. In six cases, for example, the sustainability dimension 'profit' becomes dominant insofar as 'people' and 'planet" become a condition for 'profit" and are to be included, integrated, or taken into account accordingly (e.g., Salzmann, Ionescu-Somers & Steger (2005); Steger (2004) or Hahn et al. (2014)).
d. An explicit future orientation, mainly in the form of ensuring the ability to act and perform in the future, is found in some (24%) of the definitions analysed.

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These results provide additional knowledge about corporate perspectives on sustainability. They shed light on existing knowledge *about* (or business perspectives on) sustainability and demonstrate differences depending on the respective definitions used. A question open for further investigation is if the definitions that do not refer to the environmental aspect can be considered truly sustainable as they do not take into account existing resource limitations. The same applies to the realisation of the future perspective (d), if the explicit temporal future orientation is missing, as is the case with the majority of these definitions. Moreover, if profit dominates the other dimensions (c), how can planet

Table 8.2. Definitions of Corporate Sustainability and Content Characteristics.

Source	Definition	Action	Mechanism/ Target	'People' (Social Goals)	'Planet' (Environmental Goals)	'Profit' (Economic Goals)	'P' – Dominance/ Priority	Future Focus	Other Focus
Elkington (1997)	'The attempt by firms to balance social, economic, and environmental goals'.	Balance goals	Compensation (integration)	x	x	x			
Atkinson (2000)	'Corporate sustainability means full-cost accounting with regard to all externalities caused by the firm based on the idea that corporations contribute or inhibit sustainable development'.	Account for externalities	Assume responsibility (costs)						All externalities
Bansal and Roth (2000)	'A set of corporate initiatives aimed at mitigating a firm's impact on the natural environment'.	Mitigate negative impact	Mitigation		x				
Dyllick and Hockerts (2002)	'Corporate sustainability can be defined as meeting the needs of a firm's direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities, etc.), without compromising its ability to meet the needs of future stakeholders as well'.	Meet needs; no compromising future abilities	Value added	x				x	
Funk (2003)	'A sustainable organization is one whose characteristics and actions are designed to	Designed to deliver value	Value added	x				x	

	lead a "desirable future state" for all stakeholders'.						
Hart and Milstein (2003)	'Contributes to sustainable development by delivering simultaneously economic, social, and environmental benefits. Sustainable development is the process of achieving human development in an inclusive, connected, equitable, prudent, and secure manner'.	Deliver benefits	Value added	x	x	x	People
Marshall and Brown (2003)	'An "ideal" sustainable organization will not use natural resources faster than the rates of renewal, recycling, or regeneration of those resources'.	Not overuse resources	Sufficiency		x		
van Marrewijk and Marco (2003)	'In general, corporate sustainability and CSR refer to company activities – voluntary by definition – demonstrating the inclusion of social and environmental concerns in business operations and in interactions with stakeholders'.	Take actions; include	Integration	x	x	x	Profit
Wilson (2003)	'A new and evolving corporate management paradigm that recognises that corporate growth and profitability are important, it	Pursue goals	Integration	x	x	x	

(Continued)

Table 8.2. *(Continued)*

Source	Definition	Action	Mechanism/ Target	'People' (Social Goals)	'Planet' (Environmental Goals)	'Profit' (Economic Goals)	'P' – Dominance/ Priority	Future Focus	Other Focus
	also requires the corporation to pursue societal goals, specifically those relating to sustainable development-environmental protection, social justice and equity, and economic development'.								
Figge and Hahn (2004)	'Corporate sustainability is the efficiency with which a company uses resources relative to other companies together with the effectiveness with which it contributes to the three dimensions [environmental, social, and economic] of sustainability'.	Use efficiently and effectively	Efficiency and effectiveness	x	x	x			
Steger (2004)	'The myriad of environmental and social actions that go beyond regulatory compliance and have an economic reason, a business case'.	Take actions	Value added	x	x	x	Profit		
Bansal (2005)	'Corporate sustainability means applying the principles of economic integrity, social equity, and environmental integrity	Apply principles	Integration	x	x	x			

	simultaneously to products, policies, and practices'.							
Salzmann, Ionescu-Somers, and Steger (2005)	'A strategic and profit-driven corporate response to environmental and social issues caused through the organization's primary and secondary activities'.	Response to issues	Mitigation	x	x	x	Profit	
Steurer et al. (2005)	'Business strategies and activities that meet the needs of the enterprise and its stakeholders today while protecting, sustaining, and enhancing the human and natural resources that will be needed in the future'.	Meet needs; protect, sustain, and enhance for future	Value added	x	x	x	Profit	x
Székely and Knirsch (2005)	'Corporate sustainability involves sustaining and expanding economic growth, shareholder value, prestige, corporate reputation, customer relationships, and the quality of products and services as well as adopting and pursuing ethical business practices, creating sustainable jobs, building value for all the stakeholders, and attending the needs of the underserved'.	Sustain and expand; adopt and pursue; create value	Integration	x		x		
Neubaum and Zahra (2006)	'The ability of a firm to nurture and support growth	Nurture and support growth;	Growth	x		x		

(Continued)

Table 8.2. *(Continued)*

Source	Definition	Action	Mechanism/ Target	'People' (Social Goals)	'Planet' (Environmental Goals)	'Profit' (Economic Goals)	'P' – Dominance/ Priority	Future Focus	Other Focus
	over time by effectively meeting the expectations of diverse stakeholders'.	meet expectations							
Russell, Haigh, and Griffiths (2007)	'Working towards long-term economic performance, working towards positive outcomes for the natural environment, supporting people and social outcomes, adopting a holistic approach'.	Perform; support	Integration	x	x	x			
Hahn and Figge (2011)	'The pursuit of environmental, social, and economic goals in order to achieve long-term prosperity of the firm (organizational target level) or to contribute to the long-term prosperity of society and humankind (societal target level)'.	Pursue goals; contribute	Integration, long-term livelihood	x	x	x			
Porter and Kramer (2011)	'Policies and practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which operates'.	Enhance competitiveness; advancing conditions	Competitiveness	x		x			
Lozano (2012)			Value added	x	x	x		x	

	'Corporate activities that proactively seek to contribute to sustainability equilibria, including the economic, environmental, and social dimensions of today, as well as their interrelations within and throughout the time dimension while addressing the company's system (including Operations and production, Management and strategy, Organizational systems, Procurement and marketing, and Assessment and communication); and its stakeholders'.	Proactively contribute to equilibria				
Valente (2012)	'A step toward a proactive orientation to sustainability. Firms need to find ways to interconnect social, economic, and ecological systems using "coordinated approaches social, ecological, and economic stakeholders operating as unified network or system".'	Proactively integrate	Integration	x	x	x
Milne and Gray (2013)	'Incorporating an entity's economic, environmental, and social performance indicators into its management and reporting processes'.	Measure performance holistically	Assuming responsibility (performance reporting)	x	x	x

(Continued)

Table 8.2. *(Continued)*

Source	Definition	Action	Mechanism/ Target	'People' (Social Goals)	'Planet' (Environmental Goals)	'Profit' (Economic Goals)	'P' – Dominance/ Priority	Future Focus	Other Focus
Schaltegger, Beckmann, and Hansen (2013)	'The successful market-oriented realization and integration of ecological, social, and economic challenges to a company'.	Integrate challenges	Integration	x	x	x	Profit		
Bansal and DesJardine (2014)	'The ability of firms to respond to their short-term financial needs without compromising their (or others') ability to meet their future needs'.	Respond to needs, without compromising	Need satisfaction	x	x	x		x	
Benn et al. (2014)	'Sustainable organizations engage in activities that (a) extend the socially useful life of organizations, (b) enhance the planet's ability to maintain and renew the viability of the biosphere and protect all living species, (c) enhance society's ability to maintain itself and to solve its major problems, and (d) maintain a decent level of welfare for present and future generations of humanity'.	Take actions; enhance; maintain	Value added	x	x	x		x	
Eccles et al. (2014)	'Integrating social and environmental issues into a	Integrate issues	Integration	x	x	x			

	company's strategy and business model through the adoption of corporate policies'.								
Hahn et al. (2014)	'A concept that "refers to a company's activities [...] demonstrating the inclusion of social and environmental concerns in business operations and in interactions with stakeholders'.	Take actions; include	Integration	x	x	x	Profit		
Sharma (2014)	'The achievement of a firm's short-term financial, social, and environmental performance without compromising its long-term financial, social, and environmental performance'.	Perform; without compromising	Value added	x	x	x		x	
Sterman (2015)	'Sustainability initiatives that are framed as (also) helping to heal the world'.	Help	Value added						'Heal the world"
Dočekalová and Kocmanová (2016)	'A key concept for companies to achieve long-term benefits by integrating activities associated with sustainability into their strategy'.	Achieve long-term benefits; integrate	Integration						Long-term
Dyllick and Muff (2016)	'A truly sustainable company understanding how it can create a significant, positive impact	Create impact	Value added	x	x				

(Continued)

Table 8.2. *(Continued)*

Source	Definition	Action	Mechanism/ Target	'People' (Social Goals)	'Planet' (Environmental Goals)	'Profit' (Economic Goals)	'P' – Dominance/ Priority	Future Focus	Other Focus
	in critical and relevant areas for society and the planet'.								
Schaltegger, Hansen, and Lüdeke-Freund (2016)	'Sustainability management refers to approaches dealing with social, environmental, and economic issues in an integrated manner to transform organizations in a way that they contribute to the sustainable development of the economy and society, within the limits of the ecosystem'.	Deal with and integrate issues; contribute; respect limits	Integration, value creation	x	x	x	Planet		

Source: Adapted From Meuer, Koelbel and Hoffmann, 2020, p. 324ff.

and people be more than simply add-ons? In how far do such definitions contribute to sustainability-as-a-buzzword or 'greenwashing' tendencies? Therefore, in the next section, we aim to explore the types of knowledge and business models that foster action in order to walk the sustainability talk.

3. KNOWLEDGE *FOR* SUSTAINABILITY

The notion of 'knowledge for sustainability' refers to action orientation or competencies that support knowledge creation that enables organisations or individuals to act more sustainably. This includes the capabilities of 'diagnosing' (cf. Lewin, 1946) the sustainability of practices in specific local contexts in order to act accordingly. To provide an illustrative example: The issue of the sustainability of biomass heating could be evaluated differently in a context of a country of excess regrowth of wood or de-forestation (Bosch, van de Pol, & Philp, 2015). Consequently, knowledge for sustainability also enables contextual judgement.

3.1 Knowledge Types

Caniglia et al. (2021, p. 95ff) refer to 'three dimensions of actions for sustainability', i.e. 'intentional design', 'shared agency' and 'contextual realization', and related types of knowledge supporting these actions:

(1) 'Knowledge informing intentional design': 'Generative knowledge' enables finding alternative solutions based on a variety of perspectives. 'Prescriptive knowledge' on sustainability provides guidance and inspires actors to implement change. 'Strategic knowledge' allows for defining action priorities, anticipating consequences and reacting to changing circumstances. It enables bringing intention and context into a fit.
(2) 'Knowledge enhancing shared agency': 'Critical knowledge' is necessary to challenge existing distributions, institutions and basic assumptions. 'Empowering knowledge' supports knowledge for collective action. And, the expertise and knowledge generated by collaborative practices that bring together diverse perspectives, views and interests are also crucial for enhancing shared agency (i.e., 'co-produced knowledge').
(3) 'Knowledge enabling contextual realization': 'Emergent knowledge' results from 'open cycles of intervention, reflection and evaluation'. It is important to identify possible pathways and to understand changing circumstances and experiences. 'Tactical knowledge' is needed to build networks, leverage existing resources and understand interventions' short and long-term consequences. Additionally, 'situated knowledge' relates to the specific context, e.g., regional conditions, and enables situative action.

These types of knowledge are particularly crucial to translate 'actions for sustainability' into concrete changes on an individual and group level. They have

wide-ranging effects, for example on the sustainability of business models, which will be discussed next.

3.2 (More) Sustainable Business Models

A business model explains how a company works, i.e., it reflects the core of its value-creating activities. It can help to understand and define the nature and logic of this entrepreneurial core as defined by Geissdoerfer, Vladimirova and Evans (2018, p. 402): 'Simplified representations of the value proposition, value creation, and delivery, and value capture elements and the interactions between these elements within an organizational unit'.

(More) sustainable business models are based on the '3 Ps' (People, Planet, Profit) conception and thus aim to create economic, social and ecological value in a long-term perspective. Anchoring sustainability at the company's core can represent an important competitive advantage (Bocken, Short, Rana, & Evans, 2014; Porter & Kramer, 2011). However, there is no business model for sustainability per se. Sustainability can only be incorporated in specific business models to a greater or lesser extent. This means that all business models depend on some kind of resources. The aim of integrating sustainability into a business model is, for instance, to waste less. However, a fully sustainable business model is hard to imagine as this would theoretically imply no use of resources. Even circular economy conceptions do not fully achieve net zero. The underlying and highly disputed question is if a complete de-coupling of resource use is possible (e.g. Lehmann et al., 2022).

The following section presents selected contributions on archetypal strategies and principles for designing and evaluating frameworks for determining the maturity of (more) sustainable business models.

3.3 Domains and Strategies for (More) Sustainable Business Models

Bocken et al. (2014) developed archetypal strategies for (more) sustainable business models in their widely cited paper. Categorised into three domains (i.e., technology, social and organisation), these provide action orientation for the development of concrete and context-specific measures. They are listed in Fig. 8.2. Furthermore, the authors give examples per strategy in their paper (Bocken et al., 2014, p. 48).

3.4 Sustainable Circular Economy Business Models

A particular category of (more) sustainable business models is sustainable circular business models (Geissdoerfer, Vladimirova, et al., 2018); Fig. 8.3 illustrates their particularities (Geissdoerfer, Morioka, de Carvalho, & Evans, 2018, p. 714). Although these do not drop the "people' and "profit' dimensions, the sustainable use of natural resources is at the forefront of circular business models (Pieroni et al., 2019, p. 209).

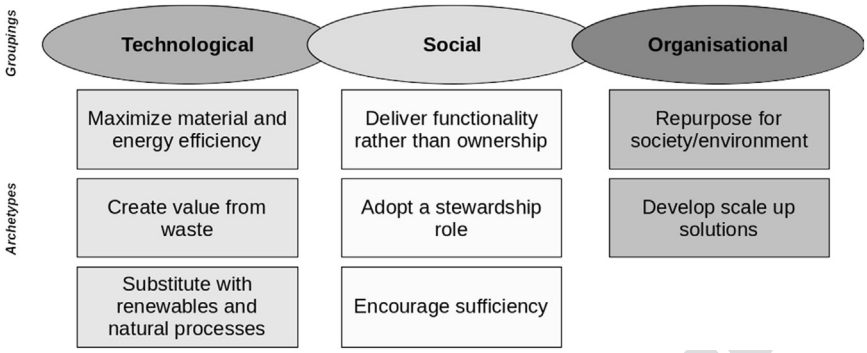

Fig. 8.2. Archetypes of Sustainable Business Models. *Source*: Adapted from Bocken et al., 2014, p. 48.

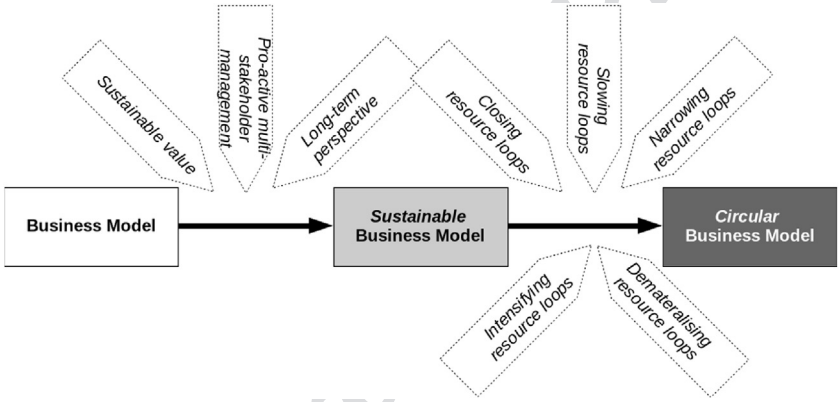

Fig. 8.3. Comparison of Traditional, Sustainable and Circular Economy Business Models. *Source*: Adapted from Geissdoerfer, Morioka, et al., 2018, p. 714.

3.5 Principles for the Design of (More) Sustainable Business Models

In the strategies presented in Table 8.3, we recognise three pillars that can be considered foundational for the design of (more) sustainable business models – especially those of the circular economy. These can be found early and regularly in the German-speaking ('grey') (e.g., von Winterfeld, 2007) but also in the English literature (Huber, 2000) and are regarded as essential principles of sustainability (Bohnenberger, 2021, p. 172; Gunarathne & Lee, 2021). These pillars are (i) Sufficiency – '*less*': Resource consumption is to be reduced (in absolute terms) by eliminating or minimising the need for resources, (ii) Efficiency – '*better*': The use of resources is to be improved – i.e., the ratio of output to the input of materials and energy is to be increased – to achieve higher resource productivity, (iii) Consistency – '*different*': Environmentally harmful/damaging resources/technologies/processes are to be substituted by environmentally friendly resources/technologies/processes.

Table 8.3. Strategies for Designing (More) Sustainable Circular Economy Business Models.

Lacy and Rutqvist (2015), OECD (2019, p. 25)	Ellen MacArthur Foundation (2015, p. 9)	Henry, Bauwens, Hekkert and Kirchherr (2020, p. 5)	Pieroni, McAloone and Pigosso (2020, p. 5)	Salvador, Barros, Freire, Halog, Piekarski and De Francisco (2021, p. 5)
Circular procurement: Use of renewable energies, ecological or fully recyclable raw materials (as a substitute for raw materials with only one life cycle). *Material recovery*: Recovery of useful resources/energy from disposed products/components. *Product life extension*: Extending the life cycle of products/components through repair, upgrade and resale. *Sharing platforms*: Increased use of products through sharing/ownership. *Product as a service*: Provision of services instead of ownership (circular resource productivity).	'*Regenerate*': Conversion to renewable energy and materials; recovery, maintenance and restoration of ecosystem condition; return of recovered biological resources to the biosphere. '*Share*': Sharing assets (e.g., machines, space, tools); reuse/second-hand; extend life through maintenance, design for longevity, expandability, etc. '*Optimise*': Increase performance/efficiency; eliminate waste in production/supply chains; use of Big Data, automation, remote management/control. '*Loop*': Reprocessing of products or components; recycling of materials; extraction of valuable raw materials from wastes. '*Virtualise*': Direct dematerialisation (e.g., books → e-books, business	'*Regenerate*': Maintaining and enhancing the performance (benefits) of ecological systems for society (e.g., urban agriculture or green roofs). '*Reduce*': Increase efficiency (improved use) by avoiding or minimising hazardous materials (design, production). '*Reuse*': Returning products to the economic cycle after their first use; extending the life of products and their components (repair, second-hand market, etc.) '*Recycle*': Processing of used materials for new use with the same (upcycling) or lower (downcycling) quality. '*Recover*': Energy recovery.	*Manufacturing side (upstream): Circular production* and *distribution:* On-demand, eco-efficiency, collection/retrieval/recycling of end-of-life materials. *Circular procurement:* Asset management, cooperation/symbiosis. *Sales/customer side (downstream): Dematerialisation* and increased *efficiency*: Services instead of products, promotion of sufficiency. *Collaborative consumption*: Sharing, sharing, pooling. *Product-service Systems*: Access models, performance/outcome models. *Longevity*: 'Lifelong' products, serviceable products, hybrid models. '*Next Life*': Direct reuse, second-hand market, product transformation, component/raw material recycling.	Strategic partnerships Cooperation/Symbiosis Waste prevention Ecological use of materials Product service systems Dematerialisation Digital technologies Reuse Recycling Reprocessing Reprocessing Extension of the product life Take-back systems Repair and maintenance

Table 8.3. *(Continued)*

Lacy and Rutqvist (2015), OECD (2019, p. 25)	Ellen MacArthur Foundation (2015, p. 9)	Henry, Bauwens, Hekkert and Kirchherr (2020, p. 5)	Pieroni, McAloone and Pigosso (2020, p. 5)	Salvador, Barros, Freire, Halog, Piekarski and De Francisco (2021, p. 5)
	travel → video conferencing); indirect dematerialisation (e.g., online shopping). '*Exchange*': Replace old materials with modern and non-renewable materials; use new technologies; use new products/ services (e.g., multimodal transportation).			

3.6 Evaluation and Maturity Assessment of (More) Sustainable Business Models

Implementing sustainability strategies leads to changes in the business model, if it the efforts go beyond 'greenwashing'. These changes can happen either incrementally or radically, whereas the former form is more common. To compare and classify business models and, above all, to evaluate (and plan) corporate sustainability development, several framework models can be found in the literature that allow the maturity of corporate sustainability to be determined. Three selected models are presented in more detail in the subsequent paragraphs.

Kleine and Von Hauff (2009) present a management tool ('Integrative Sustainability Triangle') that is based on the so-called triple bottom line that we discussed earlier. It allows for specifying and systematising success indicators, action options, goals and stakeholders to plan and evaluate concrete measures. It can help make the overall sustainability performance graphically visible as an evaluation tool. Appropriately measurable success indicators can be integrated into the triangle to measure the company's success 'three-dimensionally', i.e., in line with the requirements of a holistic sustainability concept. Furthermore, Kleine and Von Hauff (2009, p. 523) offer a schematic representation of the management tool; they bring examples for representing specific contents in their integrative sustainability triangle.

Complementary to the integrative sustainability triangle, which can be used both at the level of individual measures and for aggregated performance

measurement, Van Marrewijk and Werre (2003) developed a stage model of corporate sustainability that can be used to evaluate the 'sustainability maturity level' of the entire company. Based on six stages, the development of a company can be described in terms of its sustainability orientation.

A very similar, albeit extended, unified model of stages of corporate sustainability is presented by Landrum (2018), which can also be used to evaluate the maturity of corporate sustainability. To this end, the author integrated 22 models of corporate sustainability, corporate social responsibility, environmental management and sustainable development. The model of Van Marrewijk and Werre (2003) is also included to gain a holistic understanding of sustainability and to show different interpretations of the concept. This results in a spectrum of degrees of sustainability that can be systematised along the continuum between 'weak sustainability' and 'strong sustainability'. This can be the basis for determining the maturity of a company's sustainability orientation, giving it a better understanding 'of what is needed to achieve sustainability and reduce environmental degradation' (p. 288). The five stages are described as follows (Landrum, 2018, p. 299ff):

- Level 1 – '*Compliance*' (very weak sustainability): Companies respond with sustainability measures that are externally enforced.
- Level 2 – '*Business-centred*' (weak sustainability): Companies proactively implement business-centred sustainability measures that are beneficial to the company's economic success (self-benefit, costs, profit, image/reputation, recruitment, risk management). At this stage, companies address one or two 'Ps' and pursue a fundamental growth- and consumption-oriented strategy, which resembles a 'business-as-usual' approach with gradual changes. Sustainability is understood as 'doing less bad'.
- Level 3 – '*Systemic*' (medium sustainability): Companies work with others and integrate the entire sustainability spectrum ('3 Ps') to bring about systemic change. Sustainability is understood as 'doing more good', although the company fundamentally follows a growth and consumption-oriented strategy and continues to take an anthropocentric view of the world.
- Level 4 – '*Regenerative*' (strong sustainability): Sustainability is inherent in entrepreneurial activity and questions growth and resource consumption. Qualitative development is pursued without quantitative growth. Thus, the limits of growth and ecological performance are explicitly recognised. The company actively pursues the restoration and regeneration of natural resources. Nevertheless, the anthropocentric view of the world is maintained.
- Level 5 – '*Co-evolutionary*' (very strong sustainability): People, companies and societies see themselves in equal partnership with the natural world, giving as much as they take; the anthropocentric worldview is dropped. It is not about 'managing' the environment but about a mutually supportive and beneficial relationship and synergy in a 'we are part of the environment' way of thinking.

An alternative model for classifying different business models in terms of sustainability is by Dyllick and Muff (2016). It describes four maturity levels of

corporate sustainability along with a simplified view of value creation (inputs/problem/'what', outputs/'what for' and processes/'how'). The four stages of their model are described as follows (Dyllick & Muff, 2016, p. 163ff):

- Stage 1 – '*Business-as-Usual*': The focus is exclusively on economic considerations (e.g., cheap raw materials, efficient processes, strong market position) to maximise profit (shareholder value), which leads to the externalisation of costs. In line with the premise that 'the business of business is business' (c.f. Friedman, 1970), an 'inside-out' strategy is pursued, which places the pursuit of profit at the centre of the corporate target system.
- Stage 2 – '*Business Sustainability 1.0*' – '*broadening the business concern*': It is recognised that there are social and environmental challenges outside the usual market mechanics that represent economic risks and economic opportunities for the company. These challenges are addressed by integrating them into the business model. Nevertheless, the fundamental logic of the business model remains untouched; profit is in the foreground.
- Stage 3 – '*Business Sustainability 2.0*' – '*expanding the value created*': In this stage, sustainability is not only seen as a market and business opportunity but changes the target system of the company; value creation goes beyond the pursuit of profit (shareholder value), environmental aspects and stakeholders move into the focus of holistic value creation ('triple bottom line – 3 Ps').
- Stage 4 - '*Business Sustainability 3.0'* – '*changing the perspective*': This stage is described as 'true sustainability'. Here, the perspective is shifted to 'outside-in' so that it is not just a matter of minimising the negative impacts of the usual business model ('inside-out'), but of transforming the core of corporate activity in such a way that a significantly positive impact is achieved for society and the environment.

The competencies for sustainability and diverse approaches and typologies to facilitate business model advancement towards sustainability can be considered knowledge *for* sustainability as they aim to get into action and walk the talk towards the goal of more sustainable actions. They aim to provide valuable nuances as a business model is hardly ever 0 or 100% sustainable. The assessment depends upon the perspective, contextual interpretation, on the individual dimensions focused on – or their integration – and temporal considerations. In terms of time, more sustainable equals more long-term thinking. Avoiding the buzzword-like use of sustainability implies that all these issues have to be taken into account in concrete cases as well as acknowledging and working on resolving tensions and trade-offs. Privileging any other than the environmental dimension is kind of cutting off one's nose to spite one's face as economy and society rely onto nature's resources to exist.

4. CONCLUSIONS

This work aimed to build foundations for knowledge *about* sustainability and knowledge *for* sustainability. To trace and present the current discourse on

sustainability, a comprehensive analysis of English-language literature identified research directions, topics and representative contributions in each case to map knowledge *about* sustainability. In a further step, over 30 definitions of sustainability identified by Meuer, Koelbel, and Hoffmann (2020) were analysed. The chapter demonstrated that the target triad of 'people', 'planet' and 'profit', i.e., the integration of social, ecological and economic goals, is central. So is the long-term time horizon. Moreover, the distinct approaches found in literature regarding sustainability offer an overview regarding research framings and directions that future works might aim to connect. As this work does not discuss the epistemological and ontological assumptions of the respective research directions, future work could build upon this chapter and critically examine the distinct approaches' basic assumptions.

Q2

In the second part (knowledge *for* sustainability), the three knowledge types for sustainability (Caniglia et al., 2021) were presented. They are key for context-specific interpretation and actions for more sustainability. This knowledge is reflected in actions towards (more) sustainable business models in companies, with circular economy business models as current forms of sustainable business models that focus mainly on the crucially important 'planet' target. Domains, strategies and derived principles for sustainable business models in the literature were identified and discussed. Furthermore, framework models presented in the literature for evaluating and determining the sustainability maturity level of a company were analysed. These approaches to walk the sustainability talk and make the path more transparent through the perspective of easy-to-grasp taxonomies aim to encourage action towards the goal of more sustainability. However, sustainability is not a target that can ever be reached fully but – depending on the perspective – involve tensions and trade-offs and therefore constant action and reflection processes. This holds especially true for temporal considerations.

This study is precious to new scholars researching sustainability that aim to understand definitions, dimensions and diversity of the field and practitioners trying to realise the concept in a meaningful way rather than using sustainability as a buzzword to gain attraction for their business. Notwithstanding the contributions, this research has some limitations. Namely, the restriction to the social sciences in the search, eliminating other areas, e.g., technology. Additionally, the search protocol could be improved to encompass synonyms and the use of Boolean markers. For future avenues, we envision the development of a tool for companies to measure and benchmark their maturity towards sustainability. Especially for SMEs, we diagnose a lack of a tailor-made tool to assess their maturity level of the corporate sustainability. Knowing about the concept is a prerequisite to diagnose respective starting points and start acting. We hope that this chapter provides the groundwork to make the meaning(s) of sustainability easier to grasp in order to walk the first step of action to implement sustainability principles in practice. Therefore, conclude that (more) sustainable management is possible and we hope that our contribution can enable scholars and practitioners to gain knowledge *about* and *for* sustainability, to diagnose areas for improvement and to act more sustainably.

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Queries and/or remarks

[Q1]	Missing references: Refs "Salzmann, Ionescu-Somers and Steger (2005); Steger (2004); Hahn et al. (2014); Aguinis and Glavas (2012); Cheng and Serafeim (2014); Eccles and Serafeim (2014); Schaltegger et al. (2016); Smith and Lewis (2011); Doherty et al. (2014); Adams et al. (2016); Schaltegger and Wagner (2011); Van Dierndonck (2011); Egbue and Long (2012); Greco et al. (2019); Kivimaa and Kern (2016); Geels et al. (2016); Zhang and Anadon (2014); Arrow et al. (2012); Markard et al. (2012); Martin (2016); Smith (2012); Watermeyer et al. (2021); Gonzales (2016); Helsper (2012); Avalos (2011); Rickmann (2012); Brundiers et al. (2010); Panter-Brick et al. (2014); Psychiatry; Karlin et al. (2010); Van Doren et al. (2019); Hong and Guo (2019); Kamble et al. (2020); Green et al. (2012); Chaabane et al. (2012); Sueyoshi et al. (2017); Gebler et al. (2014); Korhonen et al. (2018); Saberi et al. (2019); Murray et al. (2017); Singh et al. (2018); Long et al. (2015); Farley and Constanza (2010); Norgaard (2010); Magis (2010); Natural Resources; Bene et al. (2019); Harvey and Pilgrim (2011); Powlson et al. (2011); Aker (2011); Gifford (2011); Garnett (2011); Banjaafar et al. (2019); Paul et al. (2016); Consumer Services; Peloza and Shang (2011); Hamari et al. (2016); Technology; Vargo and Lusch (2017); Cheng (2016); Bornhorst et al. (2010); Gonzalez et al. (2018); Bramwell (2011); Tian et al. (2020); Lee and Jan (2019); Ramkissoon et al. (2013); Hall et al. (2020); Seraphin et al. (2018); Management; Jiang and Wen (2020); Elliot (2011); Ghosh et al. (2013); Baum et al. (2013); Van Barneveld et al. (2020); Faguet (2013); Bonsang et al. (2012); Akadiri et al. (2019); Asongu et al. (2018); Social Change; Bloch et al. (2015); Koelbel and Hoffmann, 2020; Atkinson (2000); Bansal and Roth (2000); Dyllick and Hockerts (2002); Funk (2003); Hart and Milstein (2003); Marshall and Brown (2003); Van Marrewijk (2003); Wilson (2003); Figge and Hahn (2004); Bansal (2005); Salzmann, Ionescu-Somers, and Steger (2005); Steurer et al. (2005); Székely and Knirsch (2005); Neubaum and Zahra (2006); Russell, Haigh, and Griffiths (2007); Hahn and Figge (2011); Lozano (2012); Valente (2012); Milne and Gray (2013); Schaltegger, Beckmann, and Hansen (2013); Bansal and DesJardine (2014); Benn et al. (2014); Eccles et al. (2014); Sharma (2014); Sterman (2015); Dočekalová and Kocmanová (2016); Schaltegger, Hansen, and Lüdeke-Freund (2016); Van Marrewijk and Werre (2003)" are not listed in the "References" section; please provide complete reference details.
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