Exploring the implications of the value concept for performance assessment of sustainable business models

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Abstract

It is commonly accepted that the performance of sustainable business models is determined by their value creation for stakeholders, primarily understood in aggregated macro-level social, ecological and economic terms. However, very few studies attempt to measure this value creation beyond qualitative evaluations of firms, and the ones that do, focus on measuring the output of the firm. Because these output-based and firm-based metrics do not measure the fulfilment of stakeholder needs, they can only approximate actual stakeholder value creation. This implies that the conceptualisation and operationalisation of value created with sustainable business models require further clarification. In response, this paper analyses the characteristics of value itself based on insights from marketing and stakeholder research and how this affects the understanding of a business model's sustainability performance. Conceptual propositions for value-based performance assessment of sustainable business models are derived from the characteristics of subjectivity and heterogeneity, relationality and experientiality, idiosyncrasy, incommensurability, one-sidedness and non-linearity, situation-specificity and transience, and interdependence. The analysis suggest that the trinity of ecological, social and economic value needs to be reformed with a value concept based on stakeholder-specific need-fulfilment that allows actual assessment of stakeholder value creation. This assessment can only be conducted in collaboration with the stakeholders whose needs are being addressed.

Keywords

Sustainable business model, stakeholders, value, performance, assessment, measurement

1. Introduction

Sustainable business models pursue the goal of value creation for an organisation's various stakeholders (Stubbs and Cocklin, 2008). The performance of sustainable business models is primarily understood qualitatively as the aggregated dimensions of social, ecological and economic value (e.g. Patala *et al.*, 2016; Schaltegger, Hansen and Lüdeke-Freund, 2016), or through specific quantitative metrics, such as CO_2 emissions (e.g. Alonso-Martinez, Marchi and Di Maria, 2021). However, following stakeholder theory (Freeman, Wicks and Parmar, 2004; Harrison and Wicks, 2013), the creation of stakeholder value is based on the degree to which a firm meets the respective stakeholder needs. These needs are highly subjective with regard to the differentiated and partly idiosyncratic stakes of each stakeholder. For instance, employees have different stakes compared to investors, and face different needs and different dimensions through which they perceive the value offered.

However, the SBM literature provides no causal justification rooted in the origins and attributes of *value* that economy, society, and environment are the dimensions through which all stakeholders perceive value. At the same time, output-based quantitative metrics can at best approximate how much a business model fulfils stakeholder's needs. These aspects show that the predominant conception of social, ecological and economic value is too broad to understand a business model's sustainability performance with the necessary depth. If the objective of SBMs is to contribute to sustainability transformations with the creation of stakeholder value, performance assessment needs to reflect the characteristics of *value* itself. Few SBM authors define the central concept of value, with some notable exceptions (Breuer and Lüdeke-Freund, 2017; Lüdeke-Freund *et al.*, 2020; Upward and Jones, 2016). A discussion of the central construct of *value* and its implications for the understanding of an SBM's performance is missing, even when performance is explicitly analysed (e.g. Alonso-Martinez, Marchi and Di Maria, 2021). Comparing the richness of analogous insights from marketing research on the nature of customer value (Gummerus, 2013; Sweeney and Soutar, 2001) with the value notion used in the SBM literature suggests that the latter is underdeveloped. This paper discusses the nature of value and how its characteristics should be reflected in the assessment of business models' sustainability performance. This objective is reflected in the following research question:

What are the implications of the value concept for the assessment of a business model's sustainability performance?

2. Current perspectives on value and performance of sustainable business models

The concept of the business model explains what value is offered and how it is created and delivered (Boons and Lüdeke-Freund, 2013; Teece, 2010). There is overwhelming support that the primary objective of sustainable business models' on the organisational level is value creation for its stakeholders (Bocken *et al.*, 2014; Freudenreich, Lüdeke-Freund and Schaltegger, 2020; Schaltegger, Hansen and Lüdeke-Freund, 2016). This value creation can contribute to other purposes such as meso-level or macro-level sustainability transformations of markets, industries or society (Schaltegger, Hansen and Lüdeke-Freund, 2016; Stubbs and Cocklin, 2008). To understand the performance impact such business models have, it is thus crucial to assess the kinds and amount of value they are creating (Lüdeke-Freund *et al.*, 2017). The literature distinguishes the aggregated dimensions of social, ecological and economic value (Evans *et al.*, 2017), which is primarily assessed qualitatively through the value proposed by a firm (e.g. Bocken *et al.*, 2014; Snihur and Bocken, 2022). The few authors proposing quantitative measures or measuring SBMs' sustainability performance quantitatively have aligned themselves with the notion of stakeholder value creation (e.g. Alonso-Martinez, Marchi and Di Maria, 2021; Ilyas and Osiyevskyy, 2021; Lüdeke-Freund *et al.*, 2017). Lüdeke-Freund *et al.* (2017), for example, argue for prioritising performance management of issues with high materiality for stakeholders, which could then be assessed via indicators of the GRI (Global Reporting Initiative) standard. However, the output-based performance metrics that are then commonly used to understand performance do not measure whether or how much stakeholders *value* these outputs. In the literature, quantitative performance assessment is thus relying primarily on a conflation of outputs and needs via proxy indicators rather than direct measures of stakeholder value. While the sustainability performance assessment literature suggests a stakeholder perspective (e.g. Silva, Nuzum and Schaltegger, 2019), an evaluation of value, through intended recipient stakeholders, has not been attempted so far.

Snihur and Bocken (2022) explain this dearth of quantitative performance assessments with a lack of construct clarity and replicable impact measures. Indeed, these gaps in the existing literature can be traced to either broad and generic conceptualisations of value or even a lack thereof. Surprisingly, few SBM papers provide an explanation of what value is and when it occurs (exceptions include Breuer and Lüdeke-Freund, 2017; Freudenreich, Lüdeke-Freund and Schaltegger, 2020; Upward and Jones, 2016). Upward and Jones (2016), in line with these other authors, draw on human sciences and explain value as an actor's perception of a fundamental *need* (e.g. functional or psychological) being met by certain *satisfiers* (e.g. a product or service). However, the stream of literature cognisant of the origin of value also tends to assume that the needs of stakeholders are of social, ecological and economic nature: "Sustainable value incorporates economic, social and environmental benefits conceptualized as value forms" (Evans *et al.*, 2017, p. 601).

In this regard, it often remains unclear whether economic, social and ecological value refers to the recipient (e.g. society being the subject) or the content of value (e.g. Evans *et al.*, 2017). Both interpretations have conceptual issues. In the first case (recipient), the subjects would be too heterogeneous in themselves to identify their common needs (e.g. what the needs of *all* of society are). The inanimate parts of nature are even incapable of having needs, such as resource deposits having neither needs nor agency to claim them without the aid of other stakeholders. Additionally, most actors interact with more than one domain, with the prime example being the firm itself. In

the latter case (content), it is unclear who the recipient would be, and whether the needs of all stakeholders could really be summarised in these three dimensions. The relationship between an individual's perception (e.g. a stakeholder) of psychological or functional value (e.g. Sweeney and Soutar, 2001) and the aggregated social, ecological and economic dimensions dominating the SBM literature has never been explained convincingly.

Lüdeke-Freund *et al.* (2020, p. 75) conclude that this trinity is "but a placeholder for the *value pluralism* that must be acknowledged when a stakeholder-responsive interpretation of value is applied". Additionally, other characteristics of value (e.g. idiosyncrasies or incommensurability, Gummerus, 2013) have not been discussed in the light of their implications for performance assessment. If the purpose and conceptual distinctiveness of business models are based on the value concept, then performance needs to be assessed through this lens. Before existing performance management approaches could be adapted, it should be explored how the central notion of value affects the very understanding of sustainability performance itself.

3. Analysing the characteristics of value for assessing the sustainability performance of business models

Various conceptions of value exist, for instance rooted in strategic management and micro-economic theory, or marketing research. From the strategic management perspective, value is primarily measured as economic *exchange value* created by the firm's bundling of resources that is captured by the firm or other actors (Bowman and Ambrosini, 2000). However, this approach only measures the value actors are willing to give up in return, not the value they actually perceive (e.g. Gummerus, 2013). Such a perceived *use value* has to exist and exceed the exchange value for actors to engage in an exchange, else there would be no benefit to it. Monetary units can only capture extrinsic elements of this excess use value (i.e. potential for more economic value creation), as intrinsic elements such as emotional well-being cannot be easily priced. An emphasis on measuring financial value would also subordinate social and ecological objectives to economic goals (Harrison and Wicks, 2013). Additionally, as finances are finite and tangible, measuring only exchange value creation would lead to a zero-sum game, where value could only be 'created' by appropriating more value from other stakeholders.

This paper thus builds on and extends the SBM literature with a value concept based on consumer marketing and stakeholder theory (e.g. Gummerus, 2013; Harrison and Wicks, 2013; Sweeney and Soutar, 2001). The following, partially interrelated characteristics of value are analysed in this section: Subjectivity and heterogeneity, relationality and experientiality, idiosyncrasy, incommensurability, non-linearity and one-sidedness, situation-specificity and transience, and interdependence. Based on these aspects, propositions are derived for the design of a value-based performance assessment system.

3.1 Subjectivity and heterogeneity

Value is *subjective* in that both its dimensions and the desired amount are determined by the respective needs and values of a stakeholder (Upward and Jones, 2016). These needs express themselves *heterogeneously* across stakeholder groups. Business models relate to stakeholders on the individual level (e.g. employees, consumers, or community members) and organisational level

(B2B customers, business partners, NGOs, or public authorities). For instance, individual consumers will perceive value also in terms of positive emotional states (Sweeney and Soutar, 2001), while business partners' criteria could be more closely related to rational economic, social and ecological dimensions (Patala *et al.*, 2016). These fundamentally different interests on different levels need to be reflected in performance assessment dimensions. Applying the ecological, social, and economic dimensions to all stakeholders does injustice to the plurality of stakeholder interests, and contradicts well-established research on individual-level value (e.g. consumer value, Gummerus, 2013). For example, the widely-used PERVAL (perceived value) scale of Sweeney and Soutar (2001) measures consumer perceptions of the fulfilment of key value dimensions (functionality, and emotional or social appeal). Analogous measures are required for other stakeholder groups. Finally, inanimate or conflated objects or variables without interests or needs cannot *perceive* value. It is thus questionable whether value is a concept that can be applied to a monolithic "ecology" or "society" stakeholder that actually conflates various actors or even inanimate objects without agency. Nonetheless, societal and ecological impacts can be of value to other stakeholders and the firm itself (e.g. societal and ecological stability).

Proposition 1a: Value-based performance metrics need to reflect stakeholder needs rather than firm outputs.

Additionally, if value is based on specific needs (Upward and Jones, 2016), business model performance needs to be assessed through the subjective extent to which a need is met rather than 'raw output' alone. For example, value-based performance cannot be measured in terms of carbon emissions or wage levels, only in terms of how these meet stakeholders' needs for environmental protection or fair reimbursement. A specific *output* of a business model can thus be considered a *satisfier* if it can be causally linked to at least one stakeholder need. Stakeholders will hold certain expectations regarding their desired fulfilment of a need (Lüdeke-Freund *et al.*, 2020; Stubbs and Cocklin, 2008). This also means that performance assessment based on value can only be conducted together with the respective stakeholders, and never by the firm alone. Stakeholders need to be asked how they perceive the fulfilment of their needs based on what the business model offers them (Castellas, Stubbs and Ambrosini, 2019). The outputs of the firm can only be measured as satisfiers to those needs (Upward and Jones, 2016).

Proposition 1b: Value-based performance needs to be assessed through the perceived degree of stakeholder need fulfilment rather than firm outputs.

3.2 Relationality and experientiality

Many authors consider only tangible exchanges of outputs between the firm and its stakeholders (for an overview, see Freudenreich, Lüdeke-Freund and Schaltegger, 2020) as satisfiers for stakeholder needs. However, value creation is *relational* and *experiential* because stakeholders evaluate not just the value of an output, but also the relationship itself through which this exchange takes place (Gummerus, 2013; Harrison and Wicks, 2013). The needs of stakeholders are affected by the tangible exchanges, psychological and social effects of affiliation to the firm, and treatment by the firm in the firm-stakeholder relationship (Freudenreich, Lüdeke-Freund and Schaltegger, 2020; Harrison and Wicks, 2013). Harrison and Wicks (2013) argue that stakeholders' perception of value is driven, for instance, by perceptions of just conduct vis-a-vis themselves and others, or reputational benefits from affiliation with a socially-responsible firm. This means that value should

not only be assessed as a consequence of exchanged goods or services alone, but as the experience of the entire relationship (Gummerus, 2013). The unit of analysis for performance assessment is thus extended by these characteristics: Whereas the value perceived is usually considered to be contained in the value proposition component only (Bocken *et al.*, 2014; Boons and Lüdeke-Freund, 2013), the activities and relationships through which this value proposition is created also affect the needs of involved stakeholders.

Proposition 2: Value-based performance assessment includes satisfiers that reflect the entire experience of the firm-stakeholder relationship (i.e. tangible exchanges, treatment, and affiliation to the firm).

3.3 Idiosyncrasy

Because value is subjective to stakeholders' needs, certain value dimensions can be also *idiosyncratic* to particular stakeholders (Gummerus, 2013). As each stakeholder has by definition a unique stake in the business model (Freudenreich, Lüdeke-Freund and Schaltegger, 2020), stakeholder needs are not necessarily shared across stakeholder groups. For instance, while career development may be an important outcome for employees, it would not be a relevant outcome for consumers (unless it provides emotional value to the consumer). Uniform value dimensions across the business model's stakeholders (i.e. social, ecological, economic value) would only be permissible for performance assessment where interests converge. Employees, consumers and community members, for instance, may share an emotional need for environmental protection despite their unique stakes. It should thus be determined which needs apply to one, to several, or to all stakeholders. This ultimately leads to a mixed set of 'universal' and stakeholder-idiosyncratic needs and thus indicators for performance *assessment.*

Proposition 3: Value-based performance assessment should distinguish between more universal and idiosyncratic needs and assign them to the applicable stakeholders.

3.4 Incommensurability

The heterogeneity and idiosyncrasies of value dimensions result in an *incommensurability* of value (i.e. inability to simply add value dimensions on top of each other) *within* and *across* stakeholders (Castellas, Stubbs and Ambrosini, 2019). Heterogeneous drivers of value such as personal development for employees or the creation of jobs for governments cannot be easily added and transmuted into one singular dimension of total social value. This lack of a common scale means that it is not possible to aggregate all the value that is created into one economic, ecological, or social figure. Additionally, measuring and aggregating value through translation into monetary terms may only capture the value a stakeholder is willing to exchange (Bowman and Ambrosini, 2000) rather than the value they actually perceive. At the same time, if some needs are idiosyncratic to one or a few stakeholders, they should not be assessed in aggregated one figure that applies to all stakeholders. Instead, the characteristic of subjectivity provides a solution to this challenge: If value should be assessed based on the relative fulfilment (for example using Likert-scaled items) of needs, some form of average fulfilment (e.g. median score rather than a total) might be taken for each stakeholder, or even for all stakeholders. However, these average figures need to be evaluated in the context of the deviations from that average in order to understand whether some conventional needs (e.g. financial) or stakeholders (e.g. shareholders) are disproportionally

addressed. When the averages of two firms are similar, but the deviations from that average are lower for one firm, than that firm displays a more balanced consideration of stakeholder needs.

Proposition 4a: The assessment of overall value creation within and across stakeholder groups should be conducted through normalised figures of average fulfilment of stakeholder needs.

Proposition 4b: The balance of value creation within and across stakeholder groups can be assessed through the size of deviations of individual needs and stakeholders from the average fulfilment of stakeholder needs.

3.5 Non-linearity and one-sidedness

The relationship between a satisfier and the perception of value by stakeholders can follow *non-linear* and *one-sided* functions. Increasing or decreasing the performance of a good from a particular reference point can have diminishing effects on marginal utility (Kahneman and Tversky, 1979). At the same time, satisfiers can have stronger or exclusively one-sided effects on either the positive or negative side, as illustrated by the Kano Model of customer satisfaction (Matzler and Hinterhuber, 1998): A value satisfier might have a primarily negative effect when absent because it is expected but does not excite (e.g. basic expectations). Petersen, Hörisch and Jacobs (2021), for example, find that consumers disvalue offers associated with CO_2 emissions above industry average, but see little added value in below-average emissions, at least for the low involvement product of batteries. Conversely, value drivers may have a primarily positive effect because they are not expected (yet) but excite when present (e.g. for latent needs; Matzler and Hinterhuber, 1998). One-sidedness is not exclusive to customers, as illustrated by the similar two-factor model of hygiene (negative) and motivator (positive) factors of employees' satisfaction (Herzberg, 1987). For example, while timely payment of wages may not yield positive associations of value, late payment will definitely result in negative ones. For assessment, this means that dimensions can have only negative or positive effects on the average need fulfilment. This also supports that assessment of value can only be conducted in dialogue with stakeholders, and has to be based on their expectations. Similar to the Kano Model assessment (Matzler and Hinterhuber, 1998), stakeholders can be asked how they would feel if a certain satisfier would be present, and how they would feel in the opposite case.

Proposition 5: The scales for value assessment should reflect the directionality (positive, negative, or both) of need satisfiers.

3.6 Situation-specificity and transience

The value of an interaction or experience is *situational* in that it depends the context of the interaction or experience (Gummerus, 2013). Individuals can take multiple stakeholder roles (Upward and Jones, 2016), such as employee, customer and member of a community. The salience of their role can shift depending on the situation (e.g. being at work vs. being in a store), also shifting the salience of perceived value dimensions. Lüdeke-Freund *et al.* (2017, p. 186) argue that business models reflect a contextual logic that "expresses a business model's *value framing* with regard to its socio-cultural, political, legal, economic, and technological spheres." While this notion of value framing is not explored further, it implies that these spheres affect the needs and values of stakeholders (*values* and value are related, but distinct, Breuer and Lüdeke-Freund, 2017). This means that the correlation between a firm's satisfiers (output) and the value they create behaves

differently across different settings (e.g. countries or social groups). For instance, establishing the same working conditions could create different amounts value for a textile factory worker in Western Europe compared to South(-east) Asia due to differing pre-existing reference points. These makes it hard to transfer value assessments across contexts or spheres, and thus require separately designed measures cognisant of needs, values, and expectations.

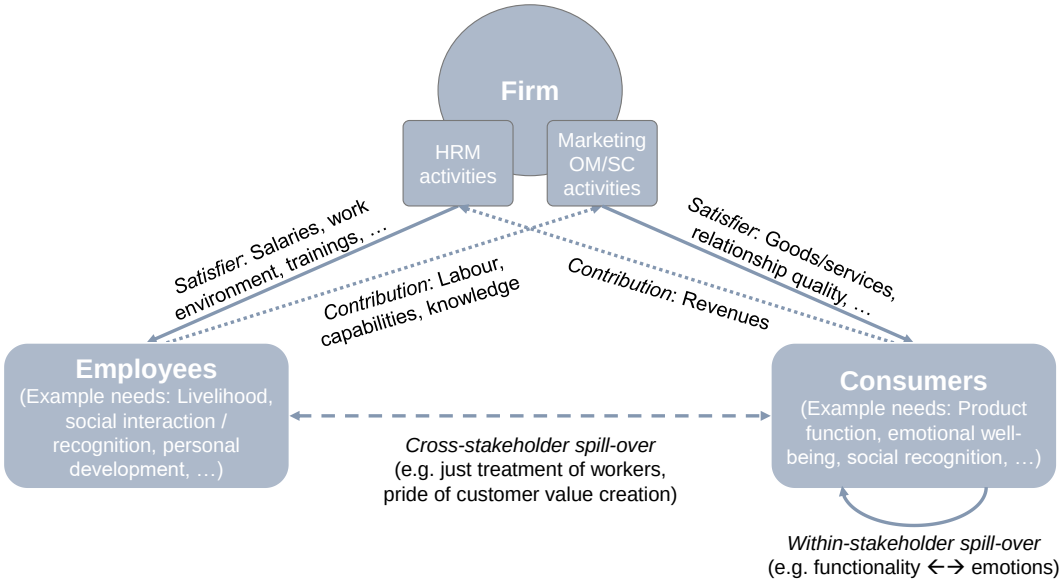
Additionally, value perceptions are also *transient* because expectations change with time (Boons and Lüdeke-Freund, 2013). Over time, the excitement of satisfiers wanes, turning qualities into linear or basic ones that are expected to be present (Matzler and Hinterhuber, 1998). While this related initially to new excitement features of products, stakeholder expectations regarding their treatment (e.g. labour conditions) may solidify similarly. For instance, if a company introduces new satisfiers to the aforementioned workers accustomed to a different standard, the satisfier will over time wane so that it behaves similar compared to the value for a textile worker accustomed to a higher standard. The correlation between a satisfier and the value it creates will thus change naturally over time.

Proposition 6: The various contextual spheres and the situation of stakeholders change the needs that define which value is perceived and their relationship to satisfiers.

3.7 Interdependence

Every business model represents an activity system of causal relationships between repeated activities or choices that transform resources into valuable satisfiers (Casadesus-Masanell and Ricart, 2010; Zott and Amit, 2010). Understanding these causal relationships is less important for assessing performance itself, than for understanding and increasing its drivers (i.e. *how* value is created. In this context, different kinds of value and their creation are *interdependent* for two reasons. First, business models transform stakeholder contributions into valuable outputs for other stakeholders (Lüdeke-Freund *et al.*, 2020). Suppliers or employees, for example, contribute to the creation of products and services, while the capture of revenues allows the reimbursement of said stakeholders (Norris, Hagenbeck and Schaltegger, 2021). Second, value offered to one stakeholder may create spill-over effects *within* and *across* stakeholders. Within a stakeholder, the different value dimensions may affect each other, such as exceptional functionality enhancing the joy derived from a product (Sweeney and Soutar, 2001). Across stakeholders, the perception of just, socially-desirable treatment of stakeholders (Harrison and Wicks, 2013) may be a source of emotional value and social-enhancement value for consumers (Sweeney and Soutar, 2001) and other stakeholders. These aspects suggest that the creation of value for one stakeholder is often the prerequisite for creating for others (Castellas, Stubbs and Ambrosini, 2019). Figure 1 illustrates the simplified and non-exhaustive interdependencies and stakeholders through the example of employees and consumers.

FIGURE 10 INTERDEPENDENCIES AND SPILL-OVERS BETWEEN STAKEHOLDER VALUE



In practice, detailed and accurate analyses of value interdependencies should include both the activity system itself, the roles and contributions stakeholders make, as well as their needs and satisfiers. However, existing approaches considering activity systems are usually stakeholder-unspecific, need-unspecific, or both (e.g. Abdelkafi and Täuscher, 2016; Brehmer, Podoynitsyna and Langerak, 2018).

Proposition 7a: Value-based performance assessment needs to map interdependencies in the activity system between the needs for stakeholders and their reciprocal contribution to satisfying the needs of other stakeholders.

Proposition 7b: Value-based performance assessment needs to map potential indirect spill-overs between needs within and across stakeholders.

3.8 Concluding summary of the analysis

The analysis illustrates that performance can only be assessed under consideration of the subjective, heterogeneous, idiosyncratic, interdependent and dynamic needs of stakeholders. This requires active involvement of stakeholders in the assessment process, both in determining the kinds and relevance of needs as well as the extent to which they are satisfied. Table 1 summarises the propositions that emerged from the analysis of the value concept's implications for the performance assessment of sustainable business models.

TABLE 7 CHARACTERISTICS OF VALUE AND PROPOSITION FOR VALUE-BASED PERFORMANCE ASSESSMENT

Value characteristic: Value is…	**Proposition for assessing value-based performance**
…subjective and heterogeneous: Dimensions and required amount of value are defined by the needs of stakeholders, leading to a plurality of heterogeneous value types.	Proposition 1a: Value-based performance metrics need to reflect stakeholder needs rather than firm outputs. Proposition 1b: Value-based performance needs to be assessed through the perceived degree of stakeholder need fulfilment rather than firm outputs.

…relational and experiential: Value is based on the experience of outcomes of and treatment in the firm-stakeholder relationship.	Proposition 2: Value-based performance assessment includes satisfiers that reflect the entire experience of the firm-stakeholder relationship (i.e. tangible exchanges, treatment, and affiliation to the firm).
…partially idiosyncratic: Many needs are specific to only one or a few particular stakeholders.	Proposition 3: Value-based performance assessment should distinguish between more universal and idiosyncratic needs and assign them to the applicable stakeholders.
…incommensurable: It is impossible to add different kinds of value into a total.	Proposition 4a: The assessment of overall value creation within and across stakeholder groups should be conducted through normalised figures of average fulfilment of stakeholder needs. Proposition 4b: The balance of value creation within and across stakeholder groups can be assessed through the size of deviations of individual needs and stakeholders from the average fulfilment of stakeholder needs.
…potentially one-sided and non-linear: Satisfiers may create only positive or negative effects, which can diminish or escalate the further an experience moves from the reference point.	Proposition 5: The scales for value assessment should reflect the directionality (positive, negative, or both) of need satisfiers.
…situational and transient: Needs and value differ across contexts and situations stakeholders find themselves in.	Proposition 6: The various contextual spheres and the situation of stakeholders change the needs that define which value is perceived and their relationship to satisfiers.
…interdependent: Different kinds of value can be a prerequisite or satisfier for other kinds of value within and across stakeholders.	Proposition 7a: Value-based performance assessment needs to map interdependencies in the activity system between the needs for stakeholders and their reciprocal contribution to satisfying the needs of other stakeholders. Proposition 7b: Value-based performance assessment needs to map potential indirect spill-overs between needs within and across stakeholders.

4. Discussion and conclusion

If a business model's primary purpose is to explain value creation (Teece, 2010), value has to be the basis of performance assessment. Approaches that do not account for the central construct of value (e.g. Alonso-Martinez, Marchi and Di Maria, 2021; Ilyas and Osiyevskyy, 2021) are thus suitable for other units of analysis, but miss the essence of the business model. In this regard, SBM research needs to adopt an evidence-based and theory-based value concept that reforms the normative

construct dominating the current discourse. In response, this paper advocates for a subject-specific need-fulfilment approach (extending Lüdeke-Freund *et al.*, 2020) rather than measuring firm output to understand *what* value is created. While other forms of impact may be validly understood this way, value-based business model performance cannot be assessed without the evaluation by stakeholders themselves. This suggests a stakeholder perspective that has been conceptualised and operationalised insufficiently in the few previous studies on SBM performance (e.g. Alonso-Martinez, Marchi and Di Maria, 2021; Ilyas and Osiyevskyy, 2021; Lüdeke-Freund *et al.*, 2017). If the entire relationship is relevant to stakeholders' perceptions of value (Harrison & Wicks, 2013), the relationship improvement inherent in engaging in a stakeholder-based assessment may in itself represent a source of value. This *mere-measurement effect* has to be acknowledged as a natural consequence of the relationality of value creation.

Due to their highly dynamic nature (Gummerus, 2013), value perceptions remain hard to assess, and which will always require adaptation across different contexts, similar to the utility of different consumer value scales in different situations. Taking a stakeholder perspective increases complexity and effort of the assessment (e.g. Silva, Nuzum and Schaltegger, 2019), which can constrains its granularity and comprehensiveness. For instance, it can be difficult for smaller organisations to assess value creation for heterogeneous subgroups that exist within most stakeholder groups (e.g. consumer segments). Nevertheless, this reconceptualization is required to remedy the construct and operationalisation issues that prevented the measurement of stakeholder value creation so far (Snihur and Bocken, 2022). While not the focus of this paper, stakeholder value creation is undoubtedly affecting wider societal and ecological variables (e.g. income equality or climate change) that should be represented as a separate but connected macro-level in performance assessment.

However, because business models explain also *how* value is created (Boons and Lüdeke-Freund, 2013), it is nonetheless important to measure the outputs as satisfiers to those stakeholder needs. The differentiation between subject-specific value and outputs of a firm enables correlating the performance to its drivers. At the same time, more output (or less in negative aspects) does not automatically result in higher value perceptions of stakeholders because it may not always be perceived as relevant to current stakeholder needs. Some stakeholders might for instance initially attribute little intrinsic value to environmental protection and thus be content with high greenhouse gas emissions. Because value expectations are dynamic rather than static or pre-defined (Gummerus, 2013), companies can affect the importance and salience of needs toward sustainability. If companies want to create progress on macro-level environmental and societal issues, they need to find connections to micro-level stakeholder needs (e.g. psychological safety), or even create a connection if they find none. In other word, firms need to ensure that they turn as many outputs as possible into satisfiers by linking them to stakeholder needs. Assuming that value exists without a beholder or even for an abstract one (e.g. nature) is not only lacking grounding in value research (e.g. Gummerus, 2013), but can also hamper business models' contributions toward sustainability transformations.

The propositions developed here can also be understood as a design guideline (see Table 1) for managers seeking to understand and improve the sustainability performance of their business models. Sustainability reporting standards, particularly the Integrated Reporting (IR) standard, are acknowledging the role of the business model (Lüdeke-Freund and Dembek, 2017). The IR standard, however, emphasises the measurement of various types of resources or capital (e.g. natural or

human) rather than stakeholder need fulfilment. Going beyond this, practitioners should engage with their stakeholders directly, and ask them about their perceptions of need fulfilment, be it in semi-structured interviews or through structured surveys. The suggested separation of output and needs-based value allows managers to identify causal links between satisfiers and value. For instance, the capital-based metrics of the IR standard could be correlated to stakeholder perceptions of need fulfilment. This also helps diagnosing problems in companies' stakeholder value propositions, e.g. when less environmental damage fails to elevate stakeholder value due to failure to relate it to stakeholder needs.

Future research can operationalise the propositions in a stakeholder perceived value scale similar to consumer perceived value scales (Sweeney and Soutar, 2001). For this, the idiosyncratic and universal value dimensions based on each stakeholder's needs have to be established and validated, for instance through phenomenological research with stakeholders. While the notion of consumer value is well-established in the marketing discipline (Gummerus, 2013), more insights could be integrated from disciplines concerned with other stakeholders. Supply chain management, human resource management, finance and corporate governance could for example yield insights into the needs of business partners, employees, and financial shareholders, respectively. The conceptual propositions of this paper will help translating these insights into SBM performance assessment systems reflective of the nature and origins of value.

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