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## Integrating Sustainability into Decision-Making: An Analysis of Different Types of Management Control Systems

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## **Introduction**

In order to meet the grand challenges of climate change and resource scarcity, the private sector must not only play a less harmful role but be proactively supportive and contribute to solutions (Schaltegger, 2018). Here, an orientation toward absolute sustainability, which refers to taking the global and local environmental capacities into account, is not yet widely applied but is considered highly relevant by scholars who have empirically examined its implementation (Bjørn et al., 2020; Dahm, 2019).

Simultaneously, reporting on environmental, social, and governmental aspects of sustainability has rapidly increased in importance, and environmental boundaries are frequently referenced (Bjørn et al., 2016). Enhancements in reporting, though, are not tantamount with changes in accounting and decision-making practices. While researchers ask for further research on how companies can incorporate absolute sustainability, it remains unclear how sustainability makes its way into their management accounting and control practices. The aim of this study is to answer the research question on how sustainability is incorporated into managerial decision-making and control today and which adjustments would facilitate further integration of sustainability.

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By qualitatively exploring and analyzing the levers of control for sustainability as well as key factors involved in transformational management in the context of a firm's investment decisions, this study contributes to the literature on management control systems, leadership, and sustainability. In particular, the results highlight the interplay between the levers of control framework and transformational leadership.

## **Theoretical Background**

### ***Management Control Theory***

The widely adopted Levers of Control (LOC) framework, developed by Simons (1994, 1995), includes four essential components: belief systems, boundary systems, diagnostic control systems, and interactive control systems. Belief systems are those that establish, communicate, and reinforce the basic values and direction of an organization, while boundary systems establish limits for decision-making. Diagnostic control systems are used to compare current performance against targets. Finally, interactive control systems are those which focus on dialogue between the top management team and lower-level staff members. We examine evidence on which role the different types of control are playing to foster the integration of sustainability into management practices.

### ***Transformational Management***

The concept of transformational leadership (or management) was originally coined by Burns (1978) and further extended by the works of Bass (1999). It is different from transactional leadership in the sense that transformational leaders watch out for initiatives

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that bear the potential to add value to the organization. They are often visionary and imaginative, looking toward the future of the company within the larger ecosystem in which it operates and taking a formative approach for strategic development. Even though both types of leaders profit from the use of management controls, they are likely to use them in a different way. While transactional leaders typically use controls to address complexity in a given strategic setting, thus aiming to manage toward efficiency more effectively, transformational leaders can be thought of as using management controls to instigate change, i.e., guiding the organization toward a new (common) vision with the target of adding to firm value beyond its' status quo (Kotter, 1990).

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### *Literature*

In 2012, Gond et al. set the scene for research on sustainability in management accounting when writing that traditional management control systems are “limited (...) in addressing environmental and social issues as well as their interrelationships with financial issues” (p. 208). Soon after, Hartmann et al. (2013) conducted a literature review on the integration of strategy and sustainability in control systems, while Management Accounting Research published a special issue on “Sustainable development, management and accounting: Boundary crossing” (Bebbington & Thomson, 2013).

Rodrigue et al. (2013) mapped sustainability-related controls onto the four levers of control dimensions of Simons (1995), which also informed our view on control systems, and which helped structuring the information deriving from our inter-views. Lueg and Radlach (2016) as well as Johnstone (2019) have written about so-called sustainability

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control systems which are “providing information and direction, as well as monitoring and motivating employees to continually develop sustainable practices and procedures for future improved sustainability performance” (p. 34). Nevertheless, having sustainability control systems in place does not ensure that sustainability is successfully integrated into corporate strategy and business activities (Beusch et al., 2022).

Therefore, we highlight three key research streams here. The first is about the assessment of impacts of business activities and how these can be measured and incorporated in decision-making. Here, Cuckston (2013) conducted a literature review on the crossroads of management accounting for carbon and management control, while Pondeville et al. (2013) focused on decision-making when examining environmental control systems and the role of contextual and strategic factors. More recently, Taïbi et al. (2020) make use of intervention research in order to describe accounting mechanisms for strong sustainability.

The second research stream examines whether sustainability objectives conflict with financial objectives. Here, Epstein et al. (2010) wrote about the challenge of integrating sustainability into operational and capital investment decision-making. Schaltegger et al. (2012) distinguish between managers who have a collaborative business case frame integrating financial, social, and environmental aspects and rather operational managers who strive to improve profitability by making incremental sustainability-related improvements to products and processes. In 2020, Siegrist et al. developed a conceptual framework embedding environment and sustainability into corporate financial decision-making.

The third related literature stream is based on Crutzen and Herzig (2013), who describe that responding to sustainability requires strategic renewal and extensive organizational learning and change. Rodrigue et al. (2013) and Johnstone (2019) underline that companies

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oftentimes fail to enable an effective dialogue between strategic and operating levels to ensure the integration of sustainability in decision-making on all levels. Here, Beusch et al. (2022) provide evidence that dialogue between managers with different business case frames may hamper subordinating sustainability to financial concerns. The ground for Beusch was paved by Sharma and Jaiswal (2018), who examined the circumstances in which dialogue mitigates the marginalization of sustainability initiatives.

### **Data and Methodology**

In our study, we follow the research paradigm of analytic induction, hereafter AI (Robinson, 1951; Znaniecki, 1934), starting with the tentative definition of our research subject based on pre-existing knowledge of theory and empirical findings and then go on to test this based on findings from explorative interviews. We conducted our interviews with a group of mostly C-level executives, all of them being responsible for high-level investment decisions in their organizations. Company size ranged from less than 10 employees to more than 100.000, coming from divergent types of industries, e.g., Manufacturing, Services, and Energy.

The research logic of AI is used to guide data collection and analysis as well as to organize the presentation of findings (Katz, 2001): “Its objective is causal explanation, a specification of the individually necessary and jointly sufficient conditions for the emergence of some part of social life. AI calls for the progressive redefinition of the phenomena to be explained” (Katz, 2001, p. 484). Authors have invoked AI to conduct more rigorous qualitative analyses and to bridge the qualitative-quantitative divide (Hammersley & Cooper, 2012). Examples of such work in management and entrepreneurship literature include Bansal and Roth’s (2000) model of ecological

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responsiveness, Busch's (2011) work on organizational adaptation to disruptions of the natural environment (e.g., climate change) and Hoffmann et al.'s (2009) analysis of regulatory uncertainty, investments, and resources.

Following this approach and guided by extant knowledge of management control theory as well as transformational management, both comprising the theoretical scaffolding of our study (Wener & Woodgate, 2013). Interviews were conducted and analyzed in an iterative manner, beginning with an initial set of questions, and following the principle of the hermeneutic circle, with the goal of refuting, supporting, or further developing the initial theoretical approach.

Following Spence et al. (2010, p. 86), we concentrate on observing key activities/managerial decisions rather than on the reporting level. To understand the context of investment decisions, we explore the process of information use in (sustainability) decision-making, a step that is strongly dependent on the accounting approaches in place. Following the research approach of AI, we categorized the thematic codes along the lines of the initial theoretical framework. That is, we first pulled together all quotes relevant to the four key components of management control theory, as well as for transactional and transformational management, each as they relate to sustainability accounting and decision-making in the organizations under observation.

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## **Findings**

### ***Belief Systems***

As a first result, we found in our interviews that belief systems can be an important driver

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of sustainability accounting (or inhibit it). First, I1 recounted that

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“sustainability has always been very important to me. But this is often not lived in large corporation (I1:3).” Not only can inertia be challenging, but having a vision is quite different than living it. A partial explanation for this can be found in the further remarks of I1. For instance, in context of the harsh daily business reality, I1 remarked that, strikingly, “the people, the managers, they are measured by their royalties (share of the sales) and not by environmental goals (I1:25).” Therefore, mindset in the first place, but also the setup of incentive systems is crucial for managers’ buy-ing-in to moving from vision to actual execution.

I11 gave some insights into hurdles for integrating sustainability: “The business case must pay off. But the topic of profit and how do I get that together with the topic of sustainability, that’s a nut that has to be cracked (I1:15).”

The last statement by I11 also underlines how belief systems can collide – those based on profit vs. social welfare maximization, or rather that having room for sustainability goals requires first meeting the company’s basic needs in terms of profit-ability or even finding a business case for sustainability.

### ***Boundary Systems***

Several interviewees mentioned regulations as forcing them to change their internal processes toward sustainability. I1 described: “If there was a need (strong regulatory pressure) to invest now in order to comply with the regulations in one- or two-years’ time, then that’s what we did (otherwise not)” (I1:17). Furthermore, they described the need to account for the environmental impact of their production (e.g., on CO<sub>2</sub> emissions, pollution, etc.). I2 remarked: “This means that when we talk about sustainability, it is also important not only to assess everything financially, but also to consider what impact, so to say, we

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are making (I2:10).”

### ***Interactive Control Systems***

According to the work of Simons (1995), interactive control systems are used to stimulate organizational learning and the emergence of new ideas and strategies.

A few companies established specific processes to make sure interaction takes place and different opinions are heard: “(...) we have adapted this in the past by saying that we will make this assessment broader. And that we should also bring together the most diverse views internally as possible (I3:21).” Asked if he believes that this is the right way to handle potential conflicts, he says: “If you don’t allow these rooms, the conflicts are still there, right? (I3:42).”

To stimulate organizational learning and the emergence of new ideas, employees of a rather small company established a task force for sustainability (I6:21). Ideas which are generated in the group are communicated to the top management and interaction is called upon by the employees. Similarly, in a company of a bigger size, “a working group of employees was summoned to develop indicators for sustainability (I8:25).” One interviewee describes: “We are dependent on dialogue. (...) But you could tell that they weren’t immediately and voluntarily getting involved in such issues. (...) Here a great deal of sensitivity is required. It doesn’t happen overnight (I6:9).”

### ***Diagnostic Control Systems***

Diagnostic control systems, as one element of Simons’ levers of control framework, are used to motivate, monitor, and reward the achievement of specific goals.

The monitoring of certain indicators, of course, increases their importance which can be

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perfectly related to monitoring sustainability. “Because I believe that the impact will be stronger if we can underpin this purpose with actual measurable effects (I2:34).” Another interviewee pointed out accordingly that facts and figures are quite important in his business context to move the topic of sustainability further: “I work in a company that is very strongly driven by numbers. Where controlling values also have a certain value in a double sense (I3:13).” Here, “it would help to establish true costs, I mean what that really means for the future, if you had that business models or certain processes (I3:47).” In another interview, a similar critique was formulated: “Before, it was often like this, yes, self-descriptions, but which were more like a report, without many numbers. Or where you set your own goals. [...] Well, the risk of window dressing was already considerable (I7:25).”

### ***Transformational Management***

Parallel to focusing on control systems, we identified the following three subthemes describing what is needed for companies to step out and leave the sphere of simply operational management toward a higher focus on sustainability aspects in decision-making.

### ***Value Orientation***

A value orientation apart from financial aspects was tentatively named by one of our interviewees with saying: “I don’t want to call it, maybe idealistic, but something like this is considered apart from strictly financial terms (I2:26).” Apart from a strategic orientation, personal beliefs seem to be important for decision makers to act apart from fixed and solely financial criteria: “One managing director in the past said: I want it this way. This is what I want to leave behind when I am gone (I2:48).” Another interviewee adds that “if the understanding, the self-perception (of being a company that cares for the environment) is

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there, then ways are identified, and decisions are made. Then people find additional finances for investments in the environment (I1:25).”

### ***Willingness to Pay***

While solely one of the companies we interviewed has an extra budget in place to enable investment decisions where taking environmental aspects into account would otherwise kill the business case, most talked about the fact that there is no willingness to pay for environmental aspects. Other than the lack of an extra budget, the following was criticized: “No one clearly says that it is worth it to put one percent-age point of return into the environment. (I1:25).” Similarly, another interviewee pointed out that he believes such a willingness to pay “must come from the very top, (...) saying that x percent of the companies’ investments or division must be ESG measures, where there is no business case or meeting a KPI needed (I2: 52).”

### ***Risk Taking and Innovation/R&D***

Whenever investments are made to enter new businesses, sustainability may play a larger role compared to short-term investments or so-called maintenance investments. “The economic viability must also be given, otherwise the money is not tackled, but then other criteria come into play. You ask yourself how sustainable the product is, because it will only cross the profitability threshold for this investment in several years. (...) Sustainability is then a big point, because a product that does not comply with sustainability cannot be economical in the future. Yes, these are such criteria (I5:9).”

### **Conclusion and Future Research Opportunities**

The objective of our research was to examine how sustainability issues are addressed by

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different types of controls using Simon's (1994, 1995) seminal levers of the control framework and what might strengthen the successful integration of sustainability into business activities using Burn's (1978) pivotal concept of transformational leadership.

Our interviews document that for integrating sustainability into decision-making, all four types of control are considered relevant and examples of them playing a significant role were identified. There was not one of the four considered more important than the other ones. In order for transformational change to occur, we identified the need for a value orientation toward sustainability aspects, some degree of willingness to accept additional costs, and an openness for risk-taking, e.g., in the form of research and development.

Furthermore, we describe pathways to incorporate transformational management for changing business activities toward "deep" or "strong" sustainability, both being terminus technici for an approach stating that "critical parts of the natural capital must be preserved as to guarantee present and future human wellbeing" (Buriti, 2018, p. 8).

This study is subject to several limitations. First, as this is work-in-progress, we have not yet reached the full sample size envisioned; nonetheless, we are already close to theoretical saturation. Second, due to the short paper format, we cannot include many of the informative quotes that we otherwise would have. Finally, although our interviewee sample is comprised of experts from different sectors and firm sizes, they are all from Germany; therefore, our study's results may not be fully generalizable to other countries with starkly different national cultures or economies.

In line with Beusch et al. (2022), our research calls for future studies that more strongly incorporate stakeholder influences for integrating sustainability into investment decisions. For example, our work could be extended by studying how to measure the distance of current decision-making practices from a scientifically based measurement of companies'

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environmental impact, i.e., the need to identify patterns and business practices that facilitate or impede a resulting net positive worth for the environment.

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