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## Exploring the impact of sustainable value proposition on firm performance

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## ABSTRACT

Considering the immense potential of sustainable business models in tackling the broader challenge of corporate sustainability, this paper integrates the literature streams on sustainability practices and organizational business models to analyze the performance implications of a firm's sustainable value proposition. Based on the analysis of a large panel dataset across different industries, consistent with the proposed theory, a sustainable value proposition has been found to have a positive impact on a firm's market-based financial performance (namely, Tobin's Q). Yet, this impact turns out to be highly context-dependent. In particular, the findings reveal that a firm's R&D capabilities improve the positive effect of a sustainable value proposition on a firm's financial performance. At the same time, the marketing communication capabilities and sustainable practices regarding employee relations reduce the sustainable value proposition's financial performance effect, arguably due to the costs associated with marketing and the loss in employee interest during the process of adopting the sustainable business model elements.

## 1. Introduction

The rising concerns of today's society regarding sustainability in business practices encourage for-profit firms to adopt sustainability elements in their business models (Bocken, Short, Rana, & Evans, 2014; Martí, 2018; Sánchez & Ricart, 2010; Schaltegger, Hansen, & Lüdeke-Freund, 2016). Also, both management scholars and practitioners note the crucial role of a business model in determining a firm's potential in creating and capturing value (Biloshapka & Osiyevskyy, 2018; Brettel, Strese, & Flatten, 2012; Täuscher & Laudien, 2018) including positive societal impacts (Bocken et al., 2014; Freudenreich, Lüdeke-Freund, & Schaltegger, 2019; Hall & Wagner, 2012). Not surprisingly, therefore, there is a growing interest in finding effective ways of integrating corporate sustainability elements into conventional business model frameworks (Pedersen, Gwozdz, & Hvass, 2018; Spieth, Schneider, Clauß, & Eichenberg, 2019). Consequently, multiple concepts were introduced to describe various archetypes of sustainability in/of business models, ranging from business models entirely dedicated to addressing social issues (e.g., microfinance (Tchakoute-Tchuigoua & Soumaré, 2019) and social enterprises (Tykkyläinen & Ritala, 2020) to adopting sustainability in certain components or aspects of firm's existing business models (Bocken et al., 2014). The vibrant literature on business models that are specifically developed by entrepreneurs and

intrapreneurs to address social and environmental issues discusses social business models (Best, Miller, McAdam, & Moffett, 2020; Yunus, Moingeon, & Lehmann-Ortega, 2010), triple bottom line business models (Osterwalder & Pigneur, 2010), green business models (Sommer, 2012), community development business models (Stubbs & Cocklin, 2008), and inclusive business models (Michelini & Fiorentino, 2012). Also, efforts have been made to explain the modifications in the existing business model of a firm required for adopting sustainability (Bocken et al., 2014; Schaltegger et al., 2016; Spieth et al., 2019). Moreover, scholars reported that in many cases firms mainly introduced sustainable value proposition (a component of a firm's business model) that benefited the organization as well as the society (Bocken et al., 2014; Carayannis, Sindakis, & Walter, 2015; Patala et al., 2016). As a practice example, the business model of "The Honest Company" is built around the sustainable value proposition for ethical consumerism. Similar is the case for retailers "La Vie Calire" and "Bio City", whose business models are fundamentally based on sustainable value propositions.

Within this literature stream, many scholars and practitioners view the business models of for-profit firms as a potential source of tackling the broader challenges of corporate sustainability (Martí, 2018), and earlier studies (Dentchev et al., 2018; Evans et al., 2017; Geissdoerfer, Vladimirova, & Evans, 2018; Lüdeke-Freund & Dembek, 2017; Schaltegger et al., 2016) show that "companies developing, and

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implementing SBMs (sustainable business models) increase the likelihood of being financially viable and contributing to sustainable development” (Lüdeke-Freund, Carroux, Joyce, Massa, & Breuer, 2018, p. 147). Unfortunately, the existing research within this area so far primarily focused on identifying and elaborating various dimensions of a sustainable business model by employing theoretical and qualitative techniques (Lüdeke-Freund & Dembek, 2017; Schaltegger et al., 2016). Surprisingly little systematic attention has hitherto been paid to the implications of adopting sustainability in the overall business model or its specific components (such as value proposition) for a firm’s financial performance (Schaltegger et al., 2016; Stubbs & Cocklin, 2008), using mixed-methods and quantitative empirical approaches (Dentchev et al., 2018).

Potentially informative here might be the literature on the broader topic of the impact of corporate sustainability on firm performance; yet, the findings within this area so far exhibited inconsistent results (Godfrey, 2005; Grewatsch & Kleindienst, 2017; Hillman & Keim, 2001; Servaes & Tamayo, 2013). The empirical investigations of the association between corporate sustainability and/or corporate responsibility and performance have revealed a mixed relationship (Bansal & Song, 2017), and although a weak or moderate positive relationship emerges from the aggregation of numerous studies (Margolis, Elfenbein, & Walsh, 2007; Vishwanathan, van Oosterhout, Heugens, Duran, & Essen, 2020), the findings of negative or insignificant impact are not uncommon (Margolis & Walsh, 2003).

We argue that in order to understand the broad and multidimensional sustainability-performance relationship, it must be unpacked into particular, elementary mechanisms and subcomponents, which can shed light on the context-dependence of the broad relationship. As such, within a broader problem of understanding the mechanism and outcomes of corporate sustainability, we concentrate on one of its particular mechanisms of crucial importance, the sustainable value proposition within a firm’s business model. It is important to analyze the underlined relationship because it will help the firms and society at large to understand the value creation potential of a sustainable value proposition. This construct, an essential part of a sustainable business model, embraces the firm’s product/services, customer segments (markets), and customer relationships (Bocken et al., 2014) i.e., the aspects of corporate sustainability at the intersection of the firm and its customers.

Thus, considering the significance of sustainable value proposition construct in the conceptualization and implementation of sustainable business models (Morioka, Bolis, Evans, & Carvalho, 2017), as well as its role in determining the organization’s economic, environmental, and social value-added (Carayannis et al., 2015; Patala et al., 2016), in the current study we address the following *research question*: How does sustainable value proposition influence the financial performance of a firm?

To answer the stated question, we draw on the insights of integration of two literature streams: (a) sustainability in business practices (e.g., Grewatsch & Kleindienst, 2017; Peloza, 2009; Surroca, Tribó, & Zahra, 2013), and (b) organizational business models (e.g., Chesbrough, 2010; Foss & Saebi, 2017; Morris, Schindehutte, & Allen, 2005; Teece, 2010, 2018). This integration allows the development of the theoretical argument linking the construct of a firm’s sustainable value proposition to financial performance. Furthermore, we present a priori theoretical reasons to expect that this impact is highly context-dependent, particularly being contingent on the firm’s capabilities (R&D and marketing communication) and sustainable employee relationship practices. The proposed theoretical framework is then tested empirically using a large panel dataset comprising firms listed in the U.S. (2525 companies over 18 years) across different industries, allowing us to estimate the hypothesized effects reliably.

The study intends to make a set of distinct contributions. *First*, it contributes to the discussion of sustainable business models by analyzing the impact of the sustainable value proposition on the financial performance of the firm. In particular, within this research stream,

our findings extend the discussion on sustainable business models, allowing us to move from qualitative elaborations (Dentchev et al., 2018; Foss & Saebi, 2017; Lüdeke-Freund & Dembek, 2017; Martí, 2018; Schaltegger et al., 2016) towards quantitative analysis, through assessing the impact of sustainable value proposition on firm market-based performance using large-scale, longitudinal data. Furthermore, our study contributes to the discussion of corporate sustainability by incorporating and stressing the importance of the constructs of the value proposition and business model in the discussion of the association between corporate sustainability and firm financial performance (Grewatsch & Kleindienst, 2017; Peloza, 2009).

*Second*, as noted in the prior literature, a firm’s business model and its value proposition create financial returns for the firm by developing, enabling, and leveraging certain capabilities within the firm (Teece, 2018). As such, it becomes important to elaborate on these mechanisms, which are performed in the current paper with respect to the role of R&D and marketing communication capabilities in determining the value creation potential of sustainable value propositions. These insights will extend our understanding of the influence of organizational capabilities and intangible resources on sustainable business models in particular (Roome & Louche, 2016; Schaltegger et al., 2016) and corporate sustainability in general (Grewatsch & Kleindienst, 2017; Surroca et al., 2013). *Last*, our study draws attention to the usually neglected phenomenon that the costs arising from the loss in employee interests during the process of adopting sustainability in business model and value proposition can limit the latter’s value creation potential (Roome & Louche, 2016; Schaltegger et al., 2016).

## 2. Theory and hypotheses: performance implications of sustainable business model

### 2.1. Sustainable business model and its components

The construct of an organizational business model has been defined differently by scholars based on their theoretical perspectives (Amit & Zott, 2001; Chesbrough & Rosenbloom, 2002; Morris et al., 2005; Teece, 2010). Yet, at a broad level, most conceptualizations suggest three main elements in the firm’s business model: value proposition, value creation, and value capture (Foss & Saebi, 2017; Morris et al., 2005), with the former, reflecting the firm’s offering to the customers (products and services) and serving a crucial antecedent for value creation and capture. Sustainability in business models can be analyzed by observing the sustainable practices in the value proposition, value creation, and value capture (Lüdeke-Freund & Dembek, 2017). We, therefore, concur with Schaltegger et al. (2016, p. 6), suggesting that “a business model for sustainability helps describing, analyzing, managing, and communicating (i) a company’s sustainable value proposition to its customers, and all other stakeholders, (ii) how it creates and delivers this value, (iii) and how it captures economic value while maintaining and regenerating natural, social, and economic capital beyond its organizational boundaries”.

In this regard, the first element within Teece’s (2010) view is the business model’s value proposition that is directly associated with a firm’s value offerings, e.g., products and services. Firms could incorporate sustainability by offering sustainable offerings, products, and services, targeting marginalized communities, and developing sustainable customer relationships (Boons & Lüdeke-Freund, 2013; Morioka et al., 2017; Schaltegger et al., 2016). The second element in the business model is the value creation and delivery system. It is related to the firm’s resources, capabilities, and inter-organizational components. Sustainability can be incorporated here by taking initiatives in supply chain operations, organizational systems, communications, and so forth. So, firms may use different mechanisms to implement their value creation and delivery systems in a sustainable way to realize the value proposition (Boons & Lüdeke-Freund, 2013; Morioka et al., 2017). The third element is the value capture that is related to the cost structure and

revenue model. Firms can adopt sustainability in their business model by capturing the financial value as well as non-monetary value capture: environmental and social value (Boons & Lüdeke-Freund, 2013; Morioka et al., 2017). In sum, organizations adopt sustainable practices in the components of their business models that set their business models as sustainable in comparison with others.

Sustainable business models have attracted the interest of both researchers and practitioners over the last decade mainly due to the potential of the business model concept in solving the broader challenge of sustainability (Lüdeke-Freund et al., 2018; Martí, 2018). Not surprisingly, various journal special issues have been published on the topic of sustainable business models (Boons, Montalvo, Quist, & Wagner, 2013; Dentchev et al., 2018; Schaltegger et al., 2016). In existing research on sustainable business models, scholars emphasize the creation of economic, social, and environmental value as the main objective (Laasch, 2018; Sánchez & Ricart, 2010; Stubbs & Cocklin, 2008). Also, many scholars study the concept of sustainable business model and discuss various definitions of the term (Boons & Lüdeke-Freund, 2013; Schaltegger et al., 2016), archetypes (Bocken, Rana, & Short, 2015), as well as patterns (Lüdeke-Freund et al., 2018) of a sustainable business model based on the inclusion of different dimensions of sustainability in the conventional business model. Furthermore, the literature analyzed the process of adopting sustainability in the conventional business model and its components (i.e., sustainable value proposition) (Laasch, 2018; Patala et al., 2016). Also, the role of organizational learning and adaptation (Roome & Louche, 2016), stakeholder needs (Sánchez & Ricart, 2010; Seelos, 2014), and technological and social innovation (Davies & Chambers, 2018; Dobson, Boone, Andries, & Daou, 2018; McDermott, Kurucz, & Colbert, 2018) during the evolution and transformation of sustainable business model was widely discussed. Furthermore, from the previous literature on sustainable business models (Dentchev et al., 2018; Evans et al., 2017; Lüdeke-Freund & Dembek, 2017; Schaltegger et al., 2016), it is emerging that “companies developing, and implementing SBMs (sustainable business models) increase the likelihood of being financially viable and contributing to sustainable development” (Lüdeke-Freund et al., 2018, p. 147). However, the existing research has not studied the impact of the overall sustainable business model or its specific components (i.e., sustainable value proposition) on firm performance using large-scale quantitative empirical data (Dentchev et al., 2018; Schaltegger et al., 2016). Considering that value creation and capture are determined to a large extent by the value proposition (Carayannis et al., 2015), it is important to empirically analyze the impact of sustainable value proposition on firm performance. The current study is intended to focus on this research gap.

Since value proposition represents the organization’s value-added (Carayannis et al., 2015), it is considered as the main foundation of the conceptualization and implementation of a sustainable business model (Lüdeke-Freund et al., 2018; Morioka et al., 2017). Firms adopt sustainability in their business model, mainly by introducing a sustainable value proposition (Bocken et al., 2014; Patala et al., 2016) and then transform other components of the business model (i.e., value creation and value capture) accordingly (Carayannis et al., 2015). The process of this adaptation in business models of various firms is explained in detail by Patala et al. (2016) and Carayannis et al. (2015) using multiple case studies, emphasizing the fundamental significance of value proposition in the business model of the firm and the value-added. Furthermore, as practice examples, the business models of companies such as “The Honest Company”, “La Vie Calire”, and “Bio City” are fundamentally based on sustainable value propositions for ethical consumerism. As such, considering the significance of sustainable value proposition in the overall business model of the companies, in the later sections we focus on the sustainable value proposition.

## 2.2. Sustainable value proposition and firm performance

We argue that a sustainable value proposition will lead to

improvement of the firm performance through superior value creation and capture for three main reasons. First, we suggest that changing the value proposition to adopt more sustainability will lead to developing, enabling, and leveraging certain capabilities within the firm that would eventually lead to improving the firm performance. Since organizational business models are composed of various interdependent elements (Osterwalder & Pigneur, 2010; Osterwalder, Pigneur, & Tucci, 2005) in the value creation and capturing processes, a change in the business model often not only affects one component but also affects multiple components (Shafer, Smith, & Linder, 2005). So, a change in value proposition towards adopting more sustainability in the form of the introduction of new products for disadvantaged communities might require firms to adapt to the supply chain, production, and distribution channels simultaneously. Such changes require constant adaptations within the organization, experimentation, and communication across divisions to streamline the whole value creation and the capture process (Trimi & Berbegal-Mirabent, 2012). Subsequently, these initiatives and actions have been identified as important precursors of organizational learning in general (Easterby-Smith, 1997; Roome & Louche, 2016) and developing, enabling, and leveraging certain capabilities within the firm (Deeds, Decarolis, & Coombs, 2000), in particular, which ultimately lead to firm performance (Karna, Richter, & Riesenkampff, 2016).

Second, we argue that a sustainable value proposition will improve the firm’s performance for supply-side reasons by developing sustainability-related capabilities that might help in discovering or creating new markets and sources of competitive advantage. The supply-side explanation includes offering innovative and superior value propositions that are sustainable as well. It is widely observed that in efforts to offer a sustainable value proposition, firms offer new products and services that are environment-friendly and serve a social purpose. These innovative and superior products and services lead to improved firm’s performance. Moreover, firms explore new and underserved markets such as marginalized communities that offer new opportunities to introduce innovative and sustainable value propositions. In terms of targeting marginalized people, a sustainable business model remains highly effective by offering products and services to poor regions and low-income markets through innovative value propositions, thus creating returns for both shareholders and stakeholders (Sánchez & Ricart, 2010; Seelos, 2014). Furthermore, a sustainable value proposition enhances the financial success of a firm by offering new value product-service systems such as house-, car-, or bike-sharing (Hansen, Grosse-Dunker, & Reichwald, 2009). These sustainable value propositions create financial returns for firms by carving niches that eventually become new markets with huge potential under the umbrella of the sharing economy (Belk, 2014; Dreyer, Lüdeke-Freund, Hamann, & Faccar, 2017). Thus, firms observe improvement in financial performance by supplying new and sustainable value propositions in the markets.

Lastly, we suggest that a sustainable value proposition will lead to an improvement in firm performance due to demand-side reasons. According to the demand-side explanation, a sustainable value proposition increases customer willingness to pay and also differentiates the products and services to attract customers. Since the strategic orientation is more transparently communicated to the consumers and other stakeholders through its offerings, products, and services, the development of new sustainability-oriented products or services is more appreciated by stakeholders and yields financial returns for the firm (Grewatsch & Kleindienst, 2017; Servaes & Tamayo, 2013). Also, firms can differentiate their products and services (Baron, 2001) to attract customers. Differentiation will help the firms to attract new customers as well as persuade the sustainability-conscious consumers to pay more for their products and services (Flammer, 2015; Reinhardt, 1998), thus allowing them to shift the price point up and improve financial returns.

In summary, there is a set of strong a priori reasons to suggest that the level of sustainability in value proposition affects the firm’s ability to create and capture economic value, leading to superior financial

performance. Therefore, we suggest that:

**H1.** Sustainable value proposition positively influences the financial performance of the firm.

### 2.3. *The moderating role of innovation and marketing communication capabilities*

For adopting sustainability, firms change their value proposition that would lead to the development of new dynamic capabilities as well as activation of existing ones. In this regard, technological innovation and marketing-related know-how combined with the utilization of tangible and intangible assets play an important role (Teece, 2018). Moreover, the specialized knowledge related to technologies and markets has clear and immediate use in creating immediate returns (Danneels, 2008; Levinthal & March 1993). As such, it is reasonable to predict that in regard to the sustainability of the business model, particularly sustainable value proposition, the R&D capabilities, and marketing communication capabilities can play a significant role in the process of creating and capturing value.

The notion of R&D capabilities is related to R&D strength, which is a company's resources and capacity for new technology development (Li & Calantone, 1998). R&D capabilities help the firms to (a) generate new and innovative products and services, and (b) improve existing products and services (Mizik & Jacobson, 2003). The former outcome of R&D would lead to provide more variety of products and attract new customers, while the latter outcome may positively affect the existing consumer's willingness to pay more. In tandem, these outcomes of R&D have the potential to stimulate the intangible resources of the firms and help firms to adjust in the dynamic environment that would eventually lead to improving the firm's financial performance. Thus, the R&D capabilities can improve firm performance through the sustainable value proposition. Hence, the following hypothesis can be proposed:

**H2a.** Firm R&D capabilities enhance the positive impact of sustainable value proposition on the financial performance of the firm.

Similarly, the marketing communication capabilities of the firm can influence the financial returns from the sustainable value proposition by improving customer awareness about the firm's offerings. It is found that consumers are not often aware of firms' involvement and commitment to sustainable practices (Du, Bhattacharya, & Sen, 2010; Pomeroy & Dolnicar, 2009), and marketing and advertising of firms about their sustainable products and services provide a gesture to consumers while they make purchase decisions (Bhattacharya & Sen, 2004). Advertising and marketing help to reduce the information gap between the firm and the customers; this can lead to customer awareness about the sustainability of the products and services offered by the firm (Seruaes & Tamayo, 2013). Also, firms can improve their corporate reputation for offering sustainable products and services to customers (Agarwal, Stackhouse, & Osiyevskyy, 2018), which is a well-established driver of business value and performance (Agarwal, Osiyevskyy, & Feldman, 2015; Ma & Osiyevskyy, 2017), prompting customers to reward the firm for its involvement in a sustainable value proposition. The following hypothesis is proposed:

**H2b.** Marketing communication capabilities enhance the positive impact of sustainable value proposition on the financial performance of the firm.

### 2.4. *The moderating role of sustainable employee relations*

We further argue that employees' relationship with the firm (i.e., level of organizational commitment and involvement) can be a significant factor in determining the potential and actual financial returns of the firm's business model and value proposition for multiple reasons. First, sustainable practices regarding the employees enhance employee identification and involvement in the firm (Chun, Shin, Choi, & Kim,

2013; Farooq, Farooq, & Jasimuddin, 2014). Employees feel pride and prestige being part of the organization. It helps to attract and retain highly skilled individuals that improve the capacity of the firm to develop innovative value propositions, eventually leading to firm performance. Relatedly, sustainable practices regarding the employees also improve their learning, skillsets, and overall capacity to work for the success of a sustainable value proposition. For instance, employee development and training programs improve the capacity and skills of employees to develop innovative value propositions that are sustainable as well. Second, sustainable employee relations improve fairness and justice in organizational practices, which foster the development of employees and boost the employees' collective integrity, loyalty, and trustworthiness (Berman, Wicks, Kotha, & Jones, 1999). Furthermore, sustainable practices regarding employees lead to trustful relationships among the employees that create a pleasant work atmosphere and improved intra-organizational communication (Chun et al., 2013). The improved organizational commitment, collective engagement, collaboration, and communication help in designing and implementing the measures regarding improving the effectiveness and efficiency of a firm's value proposition. It can be explained using stakeholder theory (Freeman, 1984; Freeman, Harrison, Wicks, Parmar, & de Colle, 2010; Hörisch, Freeman, & Schaltegger, 2014) that emphasizes the benefits for all parties involved including employees, through collaboration, mutual understanding, and good reputation. Therefore, it can be argued that high performance in sustainable employee relations could enhance the financial returns from a sustainable value proposition. Thus, the following relationship is proposed:

**H3.** Sustainability in employee relations reinforces the positive impact of sustainable value proposition on the financial performance of the firm.

The theoretical framework of the study is summarized in Fig. 1.

## 3. Methodology

### 3.1. Sample

We test the developed theoretical framework in the context of large, public firms (all listed in the U.S.) across different industries, investigated over a long period of time to allow the hypothesized effects to materialize and to average out the possible short-term economic shocks. In particular, the study's final sample is constructed by combining two databases: KLD and COMPUSTAT North America. To ensure maximum representation of the public firms' population and to prevent selection bias, we deliberately retained in our sample all firms that were present in both datasets.

The KLD database (developed by KLD Research and Analytics, a Boston-based research firm) contains the scores on corporate sustainability-related activities of firms since 1991, based on reviews of thousands of global news sources, surveys, and on-site visits (Berman et al., 1999). The KLD database contains data on over 3000 U.S. firms and is properly considered the most comprehensive database for corporate sustainability-related aspects (Harrison & Coombs, 2012) used in a large number of previous studies (Berman et al., 1999; Boubaker, Chourou, Haddar, & Hamza, 2019; Du & Yu, 2020; Elbasha & Avetisyan, 2018; Hillman & Keim, 2001; Servaes & Tamayo, 2013). Over time, researchers established the construct validity of the KLD measures (Sharfman, 1996) and referred to them as a reliable standard for research on the topic of corporate sustainability (Barnea & Rubin, 2010; Hatten, Keeler, James, & Kim, 2020; Waddock, 2003).

The financial data related to the firm's financial performance, moderating variables, and control variables were obtained from the COMPUSTAT North America database. The final sample of firms, obtained by merging the two databases and removing firms with insufficient information, consists of 2525 firms with 18217 observations for the period from 1998 to 2015.

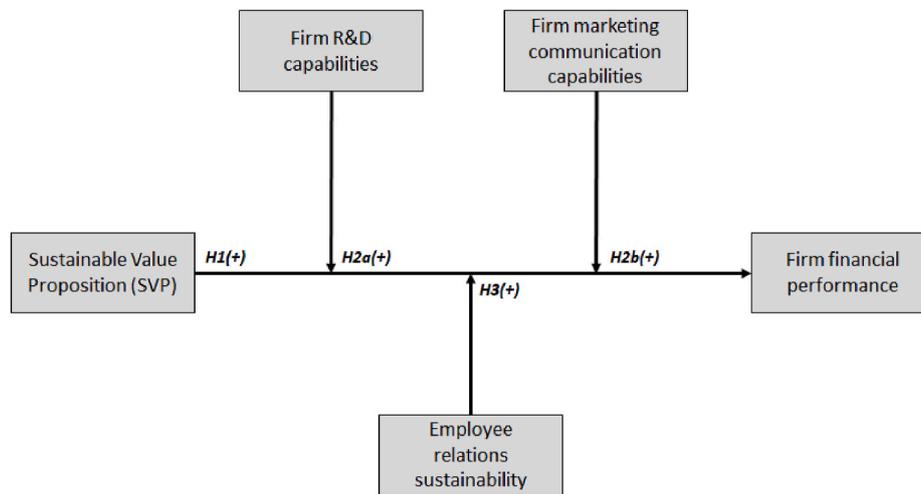


Fig. 1. Sustainable value proposition and firm financial performance: The Study's theoretical framework.

### 3.2. Measures

#### 3.2.1. Outcome variable

The *financial performance of the firm* was assessed using the conventional market-based measure, Tobin's Q, which is the market value of the firm divided by the replacement value of its assets. Tobin's Q is a widely accepted indicator of the financial performance of the firm, widely used in prior sustainability studies (Hillman & Keim, 2001; Servaes & Tamayo, 2013). This variable basically estimates the amount of market value the firm creates with its assets. More precisely, in line with Servaes and Tamayo (2013, p. 1050), we computed Tobin's Q as:

$$\text{Tobin's } Q = \frac{\text{Market value of equity} + \text{Book value of assets} - \text{Book value of equity} - \text{Deferred taxes}}{\text{Book value of assets}}$$

As described in previous studies, it is more advantageous to use Tobin's Q over accounting-based profitability measures such as Return on equity (ROE), Return on assets (ROA), etc. as it indicates the performance of the firm in comparatively longer-term (Servaes & Tamayo, 2013) and reflects the market-based view of a firm's value, as opposed to a purely accounting-based value vulnerable to possible manipulations.

#### 3.2.2. Predictors and moderators

To determine the primary predictor of our study, a firm's *sustainable value proposition*, we relied on the KLD stats database. KLD divides the firm's sustainability activities into multiple categories, such as community, diversity, employee relations, environment, product, and so forth. Since the value proposition of a firm consists of several aspects: new offerings, new customers and markets, new approaches to reach customers, and new customer relationships (Clauss, 2017; Richardson, 2008), the sustainable value proposition of the firm was assessed by using the product category in the KLD database, focusing on factors such as introducing sustainable products and services, targeting marginalized communities, employing new approaches to reach marginalized communities, and developing sustainable customer relationships (see the explanation in Appendix A), thus covering important aspects of a firm's value proposition (Bocken et al., 2014; Clauss, 2017; Hennart, Majocchi, & Forlani, 2019; Patala et al., 2016).

Furthermore, the ratings provided by the KLD database were converted into classifications based on the seriousness of strengths or concerns with respect to their relevance to the sustainable value proposition. Following the example of prior research, a blank was coded as 0, a moderate strength as 1, a strong strength as 2, a moderate concern as -1, and strong concern as -2 (Coombs & Gilley, 2005; Harrison & Coombs, 2012; Hillman & Keim, 2001; Johnson & Greening, 1999). For instance, strengths related to introducing sustainable products and services ("social opportunities—Access to finance" in Appendix A) and strengths related to targeting marginalized communities ("social opportunities—Access to communications" in Appendix A) were coded

as 2. Few dimensions of the product category of KLD (e.g., "product safety—Insuring health and demographic risk" in Appendix A) were coded as zero as they are not related to the sustainable value proposition. It means, different values were assigned to different SVPs of the firm depending on how much each SVP contributes to corporate sustainability. The coding for all the dimensions of the product category of KLD is presented in Appendix A. The final measure for sustainable value proposition was therefore assessed as the sum of each firm's concerns and strengths ratings.

The firm's *R&D capabilities* were operationalized based on its research and development (R&D) intensity (McGee & Dowling, 1994), measured as a firm's annual R&D expenditures divided by sales revenue (Mizik & Jacobson, 2003).

Similarly, the firm's *marketing communication capabilities* were operationalized based on its advertising intensity, measured as annual advertising expenditures divided by sales (Mizik & Jacobson, 2003). The occasional missing values in annual firms' R&D and advertising figures (suggesting that, according to accounting standards, these expenses were not substantive) were replaced by zeros, consistent with established practice in previous research (Chari, Devaraj, & David, 2007).

The *sustainability in employee relations* was derived from the "employee relation" category in KLD, using the calculation approach used for assessing the sustainable value proposition (explanation provided in Appendix A). It comprised sustainable practices of firms related to employees and their interaction with the firm including human

resource management such as cash profit sharing, retirement benefits, fair employee sourcing, human capital development, and so forth (explanation provided in Appendix A).

### 3.2.3. Control variables

Since we rely on a non-experimental study design, the omitted variable bias represents an important threat to our result's validity (Bascle, 2008). In particular, possible omitted variables that drive both predictor (sustainable value proposition) and outcome (financial performance) might confound the detected associations. As such, we tried to minimize this threat by taking into account the most important, theoretically relevant, variables that might simultaneously affect the predictor and the outcome.

First and foremost, we used the fixed-effects panel data regression model by nature of within-firm specification accounts for all unobservable, time-invariant differences between the firms (Woolridge, 2001). This estimation approach therefore by design controls for all firm-specific unchanging characteristics, such as industry, country of origin, and founding cohort effects.

To account for important time-varying factors that might confound the results, we added a set of control variables obtained from the firm's financial reports in the COMPUSTAT database. First, since the *size of the firm* may affect the value creation potential and bargaining power in relation to its competitors, so it may influence the firm performance (Zott & Amit, 2007). Also, the size may affect the ability of the firm to engage in sustainable practices (Jackson & Apostolakou, 2010). As such, we controlled for the firm size, in terms of a number of employees and the balance sheet value of total assets, both log-transformed. Second, prior research suggests that firm performance may influence the commitment of a firm towards corporate sustainability (Graves & Waddock, 1994). To account for this, we control for *return on equity (ROE)*, computed by dividing net income by shareholder's equity (Servaes & Tamayo, 2013). Third, since the firm's strategy can influence the firm performance as well as priorities for corporate sustainability (Berman et al., 1999), we accounted for the firm's *capital expenditures (CAPEX) intensity*, measured as annual capital expenditures divided by sales. Similarly, we controlled for the firm's *overhead costs (SG&A) intensity*, measured as the ratio of annual general, selling, and administrative expenses to sales. Then, the slack resources can affect corporate sustainability in the firm (Harrison & Coombs, 2012), so as the firm performance (Daniel, Lohrke, Fornaciari, & Turner, 2004). As such, three types of slacks were included in the analysis (Bourgeois & Singh, 1983; Bromiley, 1991; Daniel et al., 2004): *available slack* (current assets to current liabilities ratio), *potential slack* (equity to debt ratio), and *recoverable slack* (sum of receivables, inventory, and general, selling, and administrative expenses, divided by sales). Moreover, we accounted for the possible between-firm differences in sustainability practices and performance caused by the *firm age* (measured as the number of years since the public company's IPO, with log transformation) (Zott & Amit, 2007). Finally, we accounted for the *year dummies*, capturing the time-variant peculiarities of the economic environment, driven, for example, by ongoing technological or macroeconomic development (Servaes & Tamayo, 2013).

The inclusion of firm-level variables reinforces the claim that our analysis captures the influence of sustainable value proposition on firm performance, instead of the performance implications of other firm characteristics (Zott & Amit, 2007).

## 4. Analysis and results

### 4.1. Estimation approach

Having a panel dataset with a large number of firms (2525) and a long period (on average, seven years per firm) allows testing the hypothesized relationships using the within-firm, fixed effects regression specification. In other words, the performed regression analyses allow

assessing how a change in the predictor (within a firm) affects change in the outcome (Woolridge, 2001). Moreover, as noted earlier, fixed effects specification by design takes into account all time-invariant peculiarities of particular firms, by this means substantively reducing the omitted variable bias.

As such, we estimate the following equation for the firm's financial performance in year  $t+1$  as a function of predictors in year  $t$ , using the fixed effects regression model:

$$\text{Tobin's } Q_{t+1} = b_0 + b_1 * \text{SVP}_t + b_2 * \text{SVP}_t * \text{R\&D Intensity}_t + b_3 * \text{SVP}_t * \text{Advertising Intensity}_t + b_4 * \text{SVP}_t * \text{Employee Relations}_t + b_5 * \text{Return on equity}_t + b_6 * \text{CAPEX Intensity}_t + b_7 * \text{SG\&A EX Intensity}_t + b_8 * \text{Potential Slack}_t + b_9 * \text{Available Slack}_t + b_{10} * \text{Recoverable Slack}_t + b_{11} * \text{Firm Age}_t + b_{12} * \text{Total Assets}_t + b_{13} * \text{Employees}_t + b_{14} * \text{R\&D Intensity}_t + b_{15} * \text{Advertising Intensity}_t + b_{16} * \text{Employee Relations Sustainability}_t + b_{17} * t + \varepsilon_t \quad (1)$$

where:

$b_0$  reflects the regression intercept;

$b_1$  reflects the impact of sustainable value proposition on firm performance (testing H1);

$b_2, b_3, b_4$  assess the hypothesized moderating effects of R&D Intensity (H2a), Advertising Intensity (H2b), and Employee Relations Sustainability (H3), respectively;

$b_5 - b_{16}$  assess the impact of firm-level variables (controls and linear effects of hypothesized moderators) on firm performance;

$b_{17}$  reflects the impact of year dummies on firm performance;

$\varepsilon_t$  represents the error term.

## 5. Results

The descriptive statistics and correlations among the study's variables are presented in Table 1. Our main analyses, the fixed effects regression estimates of parameters of equation (1) for firm performance, are presented in Table 2.

Model 1 in Table 2 represents the effect of control variables on firm performance, revealing the negative impact of SG&A expenses intensity, recoverable slack, available slack, firm age, and total assets.

Model 2 in Table 2 intends to test baseline hypothesis 1 about the positive effect of sustainable value proposition on firm performance. The results strongly support this hypothesis, revealing a significant positive association ( $b = 0.059, p < 0.01$ ).

We performed two additional checks of this baseline hypothesis. First, since some prior studies suggest that firm performance may influence the commitment of a firm towards corporate sustainability (Graves & Waddock, 1994), there is a need to check the possible reverse causality, when the actual causal relationship goes from firm performance to sustainable value proposition, rather than the other way around. If reverse causality exists in the current study, it can bias the coefficients and significance of the reported results (Kacperczyk, 2009; Woolridge, 2001), even despite a temporal separation of the hypothesized cause (sustainable value proposition) and effect (firm performance) in the estimated equation (1). As such, we check the possible reverse causality following the process outlined by Hillman and Keim (2001) that addresses a similar relationship between sustainability and performance. Performing the "flipped" regression estimation of equation (1) [i.e., using sustainable value proposition $_{t+1}$  as an outcome and Tobin's  $Q_t$  as a predictor] suggests a lack of significant association between firm market-based performance and subsequent sustainable value proposition ( $b = 0.004, \text{S.E.} = 0.003; p = 0.137$ ). Therefore, finding spurious associations because of the reverse causality is highly unlikely in our model.

Second, the one-year time lag between the measurement of the sustainable value proposition and firm performance might not be sufficient to see the impact of the former fully materializing. We, therefore, explore the sensitivity of the hypothesized association between

**Table 1**  
Summary statics and correlation matrix.

	Mean	S.D.	Min	Max	(1)	(2)	(3)	(4)	(5)
(1) Tobin's $Q_{t+1}$	2.053	1.352	0.401	26.630	1				
(2) Sustainable Value Proposition (SVP)	-0.082	0.377	-3.000	2.000	0.021	1			
(3) Employee Relations Sustainability	0.175	1.672	-5.000	14.000	0.108	0.062	1		
(4) R&D Intensity	0.047	0.084	0.000	0.958	0.218	0.030	0.127	1	
(5) Advertising Intensity	0.013	0.032	0.000	0.400	0.112	-0.037	0.009	-0.044	1
(6) Return on equity (ROE)	0.023	8.898	-790.608	488.222	0.006	0.001	-0.009	-0.010	-0.006
(7) CAPEX Intensity	0.066	0.109	0.000	1.000	-0.063	0.017	0.016	-0.076	-0.069
(8) SG&A EX Intensity	0.260	0.182	0.000	0.999	0.294	0.031	0.059	0.673	0.253
(9) Potential Slack	1.796	2.534	-0.754	67.472	0.121	0.071	-0.000	0.298	-0.022
(10) Available Slack	2.593	2.109	0.091	39.544	0.097	0.087	-0.001	0.320	-0.048
(11) Recoverable Slack	0.507	0.236	0.038	5.925	0.185	0.054	0.055	0.601	0.128
(12) Firm Age, log	2.324	0.567	0.000	3.829	-0.101	-0.009	0.064	-0.073	-0.063
(13) Total Assets, log	7.275	1.582	-0.753	12.764	-0.164	-0.256	0.164	-0.166	-0.006
(14) Employees, log	1.546	1.700	-5.521	7.696	-0.122	-0.227	0.073	-0.306	0.003

	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(6) Return on equity (ROE)	1								
(7) CAPEX Intensity	0.000	1							
(8) SG&A EX Intensity	-0.012	-0.136	1						
(9) Potential Slack	0.005	-0.015	0.242	1					
(10) Available Slack	0.000	-0.062	0.243	0.753	1				
(11) Recoverable Slack	-0.009	-0.148	0.822	0.229	0.307	1			
(12) Firm Age, log	0.009	-0.036	-0.133	-0.055	-0.044	-0.068	1		
(13) Total Assets, log	0.009	0.112	-0.303	-0.340	-0.338	-0.269	0.173	1	
(14) Employees, log	0.014	-0.146	-0.341	-0.374	-0.409	-0.341	0.176	0.777	1

Notes: n = 18217 (firm-year observations). All Pearson correlations with absolute values above  $|r| > 0.015$  are significant at the  $p < 0.05$  level; all  $|r| > 0.021$  are significant at the  $p < 0.01$  level; all  $|r| > 0.030$  are significant at the  $p < 0.001$  level. All predictors are lagged back by one year.

**Table 2**  
Fixed effects regression results for firm performance (Tobin's  $Q_{t+1}$ ).

Variables,	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Return on equity	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
CAPEX Intensity	-0.035 (0.125)	-0.031 (0.125)	-0.033 (0.125)	-0.034 (0.125)	-0.030 (0.125)	-0.035 (0.125)
SG&A EX Intensity	-0.691*** (0.204)	-0.678*** (0.204)	-0.731*** (0.204)	-0.684*** (0.204)	-0.677*** (0.204)	-0.742*** (0.204)
Potential Slack	0.007 (0.006)	0.007 (0.006)	0.007 (0.006)	0.007 (0.006)	0.007 (0.006)	0.007 (0.006)
Available Slack	-0.013* (0.007)	-0.013* (0.007)	-0.013* (0.007)	-0.013* (0.007)	-0.013* (0.007)	-0.013* (0.007)
Recoverable Slack	-0.441*** (0.109)	-0.444*** (0.109)	-0.443*** (0.109)	-0.442*** (0.109)	-0.442*** (0.109)	-0.438*** (0.109)
Firm Age, log	-0.154*** (0.025)	-0.153*** (0.025)	-0.152*** (0.025)	-0.153*** (0.025)	-0.152*** (0.025)	-0.152*** (0.025)
Total Assets, log	-0.626*** (0.025)	-0.626*** (0.025)	-0.628*** (0.025)	-0.625*** (0.025)	-0.625*** (0.025)	-0.626*** (0.025)
Employees, log	0.012 (0.028)	0.015 (0.028)	0.016 (0.028)	0.014 (0.028)	0.016 (0.028)	0.016 (0.028)
R&D Intensity	0.564** (0.262)	0.567** (0.262)	0.809*** (0.269)	0.578** (0.262)	0.563** (0.262)	0.843*** (0.269)
Advertising Intensity	-0.596 (0.591)	-0.628 (0.591)	-0.606 (0.590)	-0.707 (0.592)	-0.623 (0.591)	-0.670 (0.592)
Employee Relations Sustainability	-0.023*** (0.005)	-0.024*** (0.005)	-0.024*** (0.005)	-0.024*** (0.005)	-0.026*** (0.005)	-0.026*** (0.005)
Sustainable value proposition (SVP) [H1+]		0.059*** (0.021)	0.019 (0.023)	0.081*** (0.024)	0.067*** (0.021)	0.046* (0.027)
SVP*R&D Intensity [H2a+]			1.091*** (0.284)			1.223*** (0.289)
SVP*Advertising Intensity [H2b+]				-1.145* (0.637)		-1.063* (0.637)
SVP*Employee Relations [H3+]					-0.016** (0.007)	-0.022*** (0.007)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	7.892*** (0.166)	7.881*** (0.166)	7.891*** (0.166)	7.880*** (0.166)	7.876*** (0.166)	7.884*** (0.166)
Within R <sup>2</sup>	0.167	0.168	0.168	0.168	0.168	0.169
Observations	18217	18217	18217	18217	18217	18217
Firms	2525	2525	2525	2525	2525	2525

Notes. Unstandardized regression coefficients are shown; standard errors are presented in parentheses. \*\*\*p < 0.01, \*\*p < 0.05, \*p < 0.1 (two-tailed). All predictors are lagged back by one year.

sustainable value proposition and firm performance to different time lags (from zero to five years). The temporal analysis, presented in Fig. 2, reveals that the impact becomes significant immediately (i.e., in the same year) and then diminishes in the second to fourth years, reaching the insignificance level starting year five with an exception in year 3 where it increased.

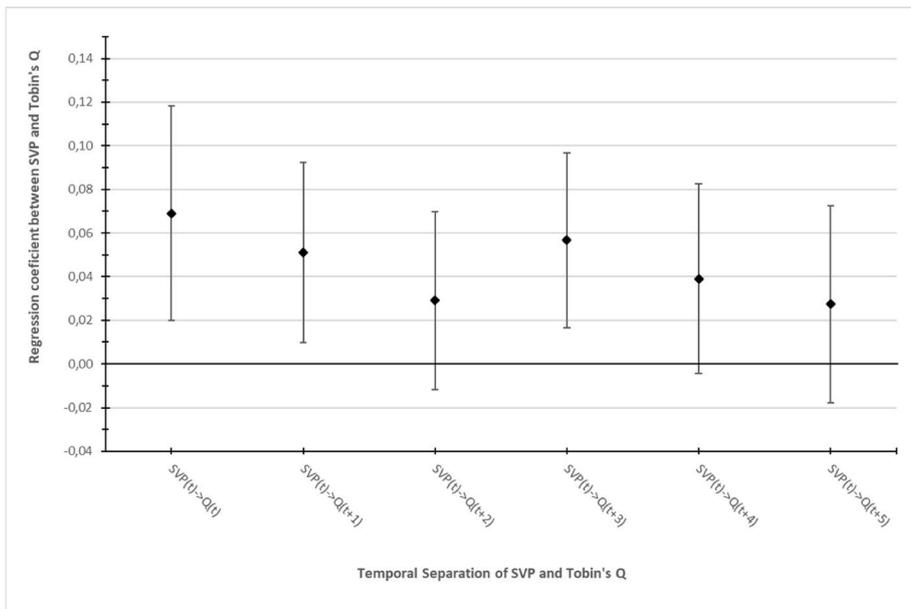
After establishing the existence of a significant positive impact of sustainable value proposition (SVP) on firm performance, we tested its context-dependence, particularly according to the moderation hypotheses H2a,b and H3. For this, the main effects of moderators were added to the models, as well as the hypothesized interaction terms, for SVP\*R&D Intensity (Model 3), SVP\*Advertising Intensity (Model 4), SVP\*Employee Relations (Model 5), and fully specified model with all

three interaction terms were added simultaneously (Model 6).

The results of interaction analysis suggest that, first, R&D intensity has a significant positive moderation effect on the association between SVP and firm performance ( $b = 1.091$ ,  $p < 0.01$  in Model 3, or  $b = 1.223$ ,  $p < 0.01$  in Model 6). Hence, hypothesis 2a is fully supported. The SVP \*R&D Intensity interaction chart is presented in Fig. 3a.

Advertising intensity demonstrates a significant moderation effect on the baseline relationship but with a negative sign ( $b = -1.145$ ,  $p < 0.1$  in Model 4, or  $b = -1.063$ ,  $p < 0.1$  in Model 6). As such, hypothesis 2b is not supported in our results (see Fig. 3b).

Finally, the significant, negative interaction term SVP\*Employee Relations ( $b = -0.016$ ,  $p < 0.05$  in Model 5, or  $b = -0.022$ ,  $p < 0.01$  in Model 6) contradicts hypothesis 3. Our findings suggest that employee

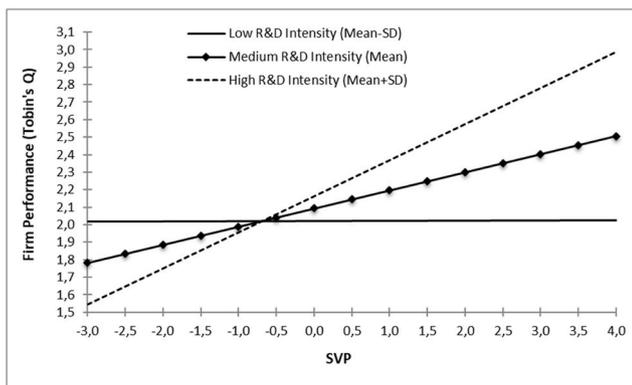


**Fig. 2.** Temporal Separation of Sustainable Value Proposition (SVP) and Firm Performance: Analysis of Forward Lags

*Notes.* The vertical axis represents the regression coefficient  $b_1$  (Equation (1)) between sustainable value proposition (SVP) and firm performance (Tobin's Q). The horizontal axis represents different time lags between the cause (SVP) and effect (Tobin's Q), from zero to five. The bars around point values represent 95% confidence intervals for the regression coefficients.

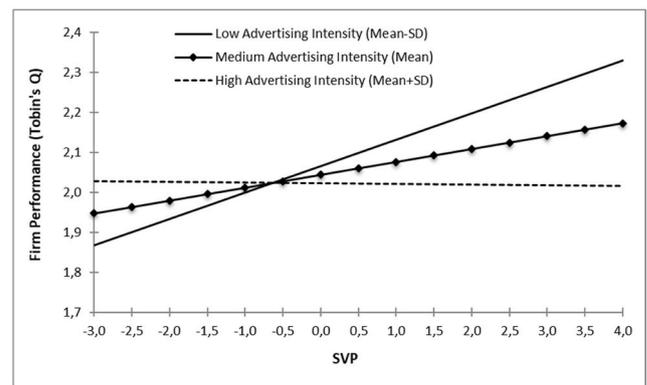
*Notes.* The vertical axis represents the regression coefficient  $b_1$  (Equation 1) between sustainable value proposition (SVP) and firm performance (Tobin's Q). The horizontal axis represents different time lags between the cause (SVP) and effect (Tobin's Q), from zero to five. The bars around point values represent 95% confidence intervals for the regression coefficients.

**a. Detected Moderation Effect of R&D Intensity on the Association between Sustainable Value Proposition (SVP) and Firm Performance**



**Fig. 3a.** Detected moderation effect of R&D intensity on the association between sustainable value proposition (SVP) and firm performance.

**b. Detected Moderation Effect of Advertising Intensity on the Association between Sustainable Value Proposition (SVP) and Firm Performance**



**Fig. 3b.** Detected moderation effect of advertising intensity on the association between sustainable value proposition (SVP) and firm performance.

relations sustainability attenuates the SVP-Performance association. The interaction chart of this relationship is shown in Fig. 3c.

**6. Discussion and conclusion**

The study analyzes the sustainable value proposition and its impact on the financial performance of the firm. It is found that the sustainable value proposition creates value for the firm, but the impact is highly context-dependent. In particular, the firm's R&D capabilities enhance this impact, while the firm's marketing communication capabilities and sustainable practices regarding employee relations reduce it.

The current study findings contribute to the existing literature in the following ways. First, the results extend the discussion on sustainable business models by analyzing the impact of sustainable value proposition on the financial performance of the firm. The previous research on the topic largely focused on the elaboration of the construct of

sustainable business model and related aspects through theoretical (Bocken et al., 2014; Martí, 2018) and qualitative research (Sánchez & Ricart, 2010; Spieth et al., 2019), while neglecting the performance implications of such practices and the analysis of the phenomenon using large scale data and quantitative techniques (Dentchev et al., 2018; Foss & Saebi, 2017; Lüdeke-Freund & Dembek, 2017; Schaltegger et al., 2016). Our research fills this gap by employing quantitative analysis techniques on longitudinal data. This shows that by adopting sustainability in the value proposition, firms can serve the broader societal concerns for stakeholders as well as can benefit the shareholders in the form of financial returns. Furthermore, the study contributes to the discussion of corporate sustainability by incorporating the construct of the sustainable value proposition in the discussion of corporate sustainability and firm financial performance (Grewatsch & Kleindienst, 2017; Pelozo, 2009). Although most studies report a positive corporate sustainability-performance relation, it is still surrounded by

c. Detected Moderation Effect of Employee Relations Sustainability on the Association between Sustainable Value Proposition (SVP) and Firm Performance

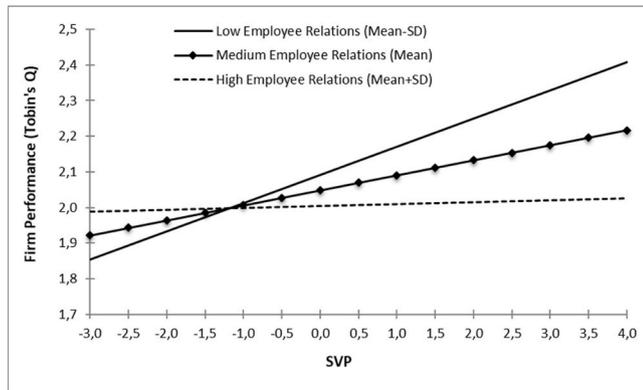


Fig. 3c. Detected Moderation Effect of Employee Relations Sustainability on the Association between Sustainable Value Proposition (SVP) and Firm Performance

Notes. The interaction charts are built using the regression estimated in the fully specified Model 6 (Table 2).

considerable ambiguity and requires further research to illustrate under which conditions (e.g., mediators/moderators/elements in the construct of corporate sustainability) corporate sustainability pays off (Orlitzky, Schmidt, & Rynes, 2003; Pelozo, 2009; Surroca et al., 2013; Vishwanathan et al., 2020). We argue that the concept of business model and value proposition in corporate sustainability-performance relation can play a significant role. Since a business model represents the logic of the firm allowing it to create and capture financial value, and it is more appropriate to analyze the relation between value-creating aspects of the firm (i.e., value proposition) and financial performance of the firm. So, sustainability in the value proposition and business model of the firm will help to elaborate the corporate sustainability-performance relation by focusing on sustainability in activities of the firm directly related to value creation (Schaltegger et al., 2016; Schaltegger, Lüdeke-Freund, & Hansen, 2012). It is crucial to note that a sustainable value proposition is an important building block of a sustainable business model reflecting the firm's interactions with customers; yet, it is not the only one. The other sustainability-focused elements of the business model, to be studied in further investigations, are related to the internal organization of the firm's activities and processes.

Second, the study elaborates on the role of organizational capabilities and intangible assets in financial performance during the process of adopting sustainability in the value proposition and hence the business model of the firm. In particular, the effect of R&D and marketing communication capabilities is analyzed and discussed. Since the business model creates financial returns by developing and enabling certain capabilities in the firm (Teece, 2018), it becomes important to elaborate on these mechanisms. Previous research on sustainable business models analyzed the organizational transformation process and learning (Roome & Louche, 2016), but overlooked the role of organizational capabilities (Schaltegger et al., 2016) that play a particularly significant role in creating financial returns while adopting new or sustainable business models (Foss & Saebi, 2017; Mezger, 2014). We found that R&D capabilities enhance the financial returns from sustainable value proposition, whereas marketing communication capabilities reduce it. It could be explained in this way. Marketing communication capabilities can improve the communication between an organization and its customers. Yet, sometimes when an organization does less to adopt sustainability it shows to consumers that it might have resulted in perceived greenwashing and consumer cynicism (Berrone, Fosfuri, & Gelabert, 2017), which then leads to a loss in financial performance. Another alternative explanation could be that R&D and marketing communication capabilities can be a tradeoff with each other and firms alternatively

invest in them. While firms tend to invest in both simultaneously, it leads to an increase in the cost and thus financial performance suffers (Erickson & Jacobson, 1992; Mizik & Jacobson, 2003). Furthermore, a previous study showed that R&D capabilities lead to value creation while marketing capabilities are related more to value appropriation (Mizik & Jacobson, 2003). So, for financial value creation from the business model and its components, the R&D capabilities are more relevant and beneficial instead of advertising and marketing communication capabilities. The findings of this study extend our understanding of the influence of organizational capabilities and intangible resources on sustainable value proposition and sustainable business model and their financial returns by taking into account the impact of R&D and marketing communication capabilities. Furthermore, it is important to understand the role of organizational capabilities here because the success of overall sustainability efforts in organizations depends on complementary competencies, intangible resources, and facilitating infrastructure (Grewatsch & Kleindienst, 2017; Pedersen et al., 2018; Surroca et al., 2013).

Lastly, this study contributes to the literature by analyzing the role of sustainable practices regarding employee relations and their influence on financial returns from the sustainable value proposition and hence sustainable business model. In previous research, there is a discussion regarding the implications of adopting sustainable practices in employee relations (Berman et al., 1999; Chun et al., 2013). It is argued that the actions for adopting sustainable practices regarding employee relations can improve employee identification, motivation, and organizational commitment that will favorably affect financial performance. On the other hand, during the process of change in the business model of a firm, employees may create resistance to the potential losses in their status, work routines, and benefits. In particular, our findings (negative interaction, opposite to hypothesis 3) suggest that with regards to employee relations' moderation effect on the link between sustainable value proposition and performance, these constructs act as substitutes rather than complements when it comes to financial performance implications. The reason for this effect might lie in the sustainable business model; sustainable value proposition as a firm's business model is composed of various interdependent components (Osterwalder & Pigneur, 2010; Osterwalder et al., 2005), and a change in the value proposition or other components of the business model requires changes in the whole organization (Boons et al., 2013; Govindarajan & Timble, 2015) which may lead to harm the interests of employees in terms of loss of status, capabilities, and identity related to their work routines (Chesbrough & Rosenbloom, 2002; Tripsas & Gavetti, 2000) that will result in reluctance and resistance from employees (Stanley, Meyer, & Topolnytsky, 2005; Wisse & Sleebos, 2016). Consequently, firms may incur non-trivial costs for mitigating resistance to the change, adopting new structures, systems, and technologies. Eventually, these costs will adversely affect the financial performance of the firm (Thompson, 1996).

The findings of our study extend the debate on the issue by showing that when firms adopt more corporate sustainability in their employee relations, it can offset the losses of the employees arising from changing the business model and its components to achieve more sustainability in it, but in situations where the costs outweigh the benefits, the financial returns suffer. These findings can improve our understanding of employee behavior and its subsequent effect on financial performance during the process of changing the business model to adopt sustainability (Roome & Louche, 2016; Schaltegger et al., 2016). Also, it sheds light on the possible costs incurred during the process of adopting a change in business model (Chesbrough, 2010; Foss & Saebi, 2017). Furthermore, it has non-trivial implications for the impact of employee relations on corporate sustainability (Grewatsch & Kleindienst, 2017).

The current study offers crucial managerial implications. First, as in the current era, managers and practitioners are increasingly facing pressure from governments, activists, media, social and environmental groups, customers, and other stakeholders to adopt sustainability in their business operations, the findings provide guidelines to managers

and practitioners that they can focus on changing their value proposition towards adopting more corporate sustainability, which will help the firms not only to improve their corporate reputation in the eyes of stakeholders but will also directly create financial benefits. Furthermore, managers need to continuously work on improving sustainable value propositions as it is found that financial returns from sustainable value propositions diminish over time. Ergo, long-term strategy is highly appreciable to generate returns. Second, our findings elaborate further to managers and practitioners that they can focus on innovation and R&D as a strategic option in the way forward towards introducing more corporate sustainability in the value proposition as these capabilities improve returns from sustainable value proposition. R&D and innovation-related capabilities are beneficial because they help in enhancing existing value propositions as well as in introducing new ones in the quest for adopting corporate sustainability. Moreover, our findings show that marketing communication capabilities could backfire unless they are managed properly. So, managers need to avoid greenwashing and marketing spins that create a misleading impression about the sustainability of the company's value proposition. Instead, firms should put serious and diligent efforts into adopting sustainable practices as well as communicating them to relevant stakeholders. Fourth, corporate sustainability efforts generate some costs for the firms and managers should be ready to take different actions to minimize the costs associated with adopting sustainable value propositions and sustainable business models. Our findings suggest that change efforts can create possible resistance among employees that would lead to hurt the financial performance of the firm. So, managers can adopt a more inclusive approach while implementing sustainability in the value propositions and overall business model. These actions may include reducing or compensating costs related to employees' losses and educating and motivating employees about the change process. Finally, our findings are based on cross-industry data, enabling managers to implement these implications across different types of businesses operating in various industries.

The current study has some *limitations*, and *future research* can focus on the following areas. First, the current study analyzes the impact of sustainable value proposition on firm performance. Future research can focus on all aspects of the business model: value proposition, value creation, value delivery, and value capture. Second, future research may highlight more issues that can moderate or mediate the relationship between sustainable value proposition and firm performance. In this regard, for adopting sustainability in the value proposition, firms may have to convince their top management to produce financial returns. So, the role of top management can be crucial in this discussion. Second, future studies may focus on other types of firm performances than financial performance because a sustainable value proposition may lead to improvement of the operational and innovation performances by integrating more transparency and efficiency (Cai, Jo, & Pan, 2012). Also, if the firm's performance is measured in terms of social impact, then a sustainable value proposition can make even more difference (Bocken et al., 2014; Freudenreich et al., 2019; Martí, 2018; Schaltegger et al., 2016). Finally, the current study focuses on the internal aspects of the firm. The financial returns from sustainable value proposition can also be improved due to external factors. For example, environmental dynamism, intense competition, and the threat from outside factors can have some implications (Candi, Melia, & Colurcio, 2019; Osiyevskyy & Dewald, 2015).

#### Declaration of competing interest

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

#### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.emj.2021.09.009>.

[org/10.1016/j.emj.2021.09.009](https://doi.org/10.1016/j.emj.2021.09.009).

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