

# Arcade



## RESET THE GAME

When the Purpose of Innovation is  
Social Value Creation instead of  
Maximizing Profits



Jilde Garst



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WHEN THE PURPOSE OF INNOVATION IS SOCIAL VALUE  
CREATION INSTEAD OF MAXIMIZING PROFITS

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This research was conducted under the auspices of the  
Wageningen School of Social Sciences (WASS)

# Reset the game

WHEN THE PURPOSE OF INNOVATION IS SOCIAL VALUE  
CREATION INSTEAD OF MAXIMIZING PROFITS

Jilde Garst

## *Thesis*

submitted in fulfilment of the requirements for the degree of doctor

at Wageningen University

by the authority of the Rector Magnificus,

Prof. Dr A.P.J. Mol,

in the presence of the

Thesis Committee appointed by the Academic Board

to be defended in public

on Wednesday 5 February 2020

at 4 p.m. in the Aula.

Jilde Garst

Reset the game: When the Purpose of Innovation is Social Value Creation instead of Maximizing Profits

210 pages.

PhD thesis, Wageningen University, Wageningen, the Netherlands (2020)

With references, with summary in English.

ISBN: 978-94-6395-234-7

DOI: <https://doi.org/10.18174/508147>

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# Chapter 1.

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## GENERAL INTRODUCTION

## 1.1 Introduction

The role of commercial innovation in society can be described in several ways. In the neoclassical business literature, innovation has traditionally been depicted as a way in which firms are able to gain competitive advantage by responding to the dynamics of their environment and thereby ensuring their own survival (Adams, Bessant, & Phelps, 2006; W. M. Cohen & Levinthal, 1990; Teece, 2009). However, over the years scholars have given more and more attention to the unpredictability of innovation and thereby the unforeseen negative impact innovation can have on society (Guston, 2008). At the same time, commercial innovation can also provide solutions of the grand challenges of today's society (Ferraro, Etzion, & Gehman, 2015). Reflecting upon the positive and negative societal impact of innovation, Responsible Research and Innovation (RRI) scholars have investigated the possibilities of directing innovation away from doing harm and towards doing good. With this aim they have developed several conceptual frameworks for RRI, positioning it as *innovation for and with society* (Stilgoe, Owen, & Macnaghten, 2013). Although drawing upon a multitude of scientific fields such as research governance, research ethics and engineering ethics, these frameworks have so far not been connected to the business theories on innovation management and empirical investigations of RRI frameworks in commercial innovation settings have been limited (Blok & Lemmens, 2015).

When regarding the RRI in commercial settings as a commercial actor taking responsibility to create positive societal impact with their innovations, the link with the Corporate Social Responsibility (CSR) literature is quickly made. In this dissertation, I connect the RRI literature to both the business literature on innovation management as well as the CSR literature (including corporate sustainability).<sup>1</sup> By making these connections, I combine insights from RRI frameworks and CSR theories to redirect commercial innovation management theory towards social value creation. In the remainder of this introduction, I will elaborate on why innovation management theory needs this redirection and how theories from the other two fields can provide insights for this redirection.

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<sup>1</sup> In this dissertation we will mostly draw upon the CSR literature, but will also refer to several articles from the corporate sustainability field. We acknowledge that both literature streams have different origins and thus different scopes (see Bansal & Song, 2017). However, to keep our storyline clear for readers not familiar with the distinction, we will refer to both fields of literature as the CSR literature.

## 1.2 Background

### 1.2.1 The purpose of innovation

*“[Social responsibility] refers to the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society.”*

Howard R. Bowen  
(1953, p. 6, cited in Carroll, 2008, p. 25)

Besides providing the above stated definition of CSR, Howard R. Bowen also showed in his book *Social Responsibilities of the Businessman* that 93.5% of the business executives in 1946 recognized that they are responsible for the consequences of their actions that go beyond their profit-loss statements (A. B. Carroll, 2008). In this light, the 2019 press release of the Business Roundtable – an association of chief executive officers (CEOs) of the leading US-based firms – seems a *déjà vu*. In this statement the roundtable announced a broadening of their definition of a firm’s main purpose from only the generation of value for their shareholders to the creation of value for all stakeholders of the firm (Business Roundtable, 2019). If business executives in 1946 already knew that their responsibilities go beyond creating profit and thus value for their shareholders, why is it necessary for business executives in 2019 to release a similar statement?

A possible reason for the need of this re-statement is that the recognition of broader corporate responsibilities had gotten lost over the decades, due to a repositioning of the firm’s purpose in business management literature. Although Milton Friedman was not the only scholar describing the responsibilities of the firm as pure economic value creation, the repositioning of the purpose of firms has traditionally been attributed to him. In his article in *New York Times Magazine* (1970), as well as in the book he wrote with his wife Rose D. Friedman *Capitalism and Freedom* (1982, first published in 1962), Friedman describes the responsibilities of business managers as serving business owner(s). Thereby, he points out that since the creation of “as much money as possible” is the main interest of the firm owner(s), profit maximization is the main objective of a firm.<sup>2</sup> Additionally, according to his view – and that of many business scholars alike – the legitimacy of the firm as a societal actor is fully pragmatic: main resources required by the

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<sup>2</sup> Although Friedman (1970) acknowledges that owners can start a firm with different motives than just making as much money as possible, he positions these other motives as exceptions and not as the main driver of entrepreneurship. Any practice that does not directly contribute to the profit of the firm, is thus – according to him – beyond the firm’s objective and should be left for other organizations to act upon.

firm come from its owners, employees and customers, and thus the ability of a firm to satisfy the stakes of these actors determines the firm's legitimacy (M. Friedman, 1970; Suchman, 1995). Furthermore, Friedman indicates that the stakes of these actors are completely born out of self-interest. This view of humankind is in line with the representation of the *Homo economicus*: individuals are by nature self-interested (Henrich et al., 2001).

This neoclassical view of the purpose of the firm to maximize profit has been the foundation of many theories in business management. Theories on innovation management are a point in case. Innovation management has received a significant amount of attention from business scholars in the 21<sup>st</sup> century with the development and maturing of concepts such as open innovation (Chesbrough, 2006), absorptive capacity (Lane, Koka, & Pathak, 2006; Zahra & George, 2002) and dynamic capabilities (Teece, 2009). In developing these concepts, the main purpose of innovation has not been questioned. These theories primarily focus on how innovation can create competitive advantage and thus maximize profit by enabling the firm to survive in dynamic environments (Chesbrough, 2006; Teece, 2009). By letting this aim guide concept development, the resulting frameworks were focused on the type of knowledge considered to lead to profit maximization and the sources that might provide this knowledge. To illustrate, majority of studies on both open innovation and absorptive capacity investigate the absorption of technological knowledge by the firm, whereby the main knowledge sources are referred to as other firms and scientific institutes (Huizingh, 2011; Long & Blok, 2018; Volberda, Foss, & Lyles, 2010).

In the meantime, other business scholars started to refute some of the assumptions underlying the narrow view of the firm's purpose as popularized by Friedman. The idea that human beings are by nature driven by self-interest was debunked by scholars in the field of experimental economics showing that humans are driven by cooperation and reciprocity (Gintis, 2000). Furthermore, the drive of business towards profit maximization showed to have harmful impacts in society. Contemplating this negative impact of business on society, business scholars started asking: if firm managers should only be driven by the self-interests of their immediate audiences, are they then allowed to ignore broader societal interests and not pay attention to any harmful impact of their business on society?

Friedman (1970) indicated that business practices should not be detrimental to others and should thus be practiced within the rules of society, portrayed by laws and ethical customs. Regarding following the law, scholars following Friedman's view argued that

the political system should correct the negative externalities of business behavior. However, this idea shows a naive vision on the relationships between business and government (Garriga & Melé, 2004; Lyon et al., 2018). Whether argued from the observation that institutional voids are being filled by corporate actors (Scherer & Palazzo, 2011) or that corporate actors are using their profits to influence policy making in a direction favorable to them (Lyon et al., 2018; Wartick & Cochran, 1985), CSR scholars have shown that the political and economic realm are intertwined in a way that can hamper corrective action from government. Instead of depending on government and civil society to correct corporate behavior, the purpose of the firm could also be redirected from profit maximization towards creating value for society as a whole – also referred to as social value creation (Gehman, Treviño, & Garud, 2013).

In order to create value for society, firms need to know what is considered valuable by society: society's value system. According to Friedman, these 'ethical customs' are a boundary condition for business practices. With their focus on social value creation, CSR scholars counter this view by indicating that society's values (in the rest of the dissertation referred to as societal values) should be at the center of business practices. As Suchman (1995, p. 579) described in his definition of moral legitimacy, the survival of the firm is dependent upon "beliefs about whether the [firm's] activity effectively promotes societal welfare, as defined by the audience's socially constructed value system". This new notion of legitimacy widened the pragmatic legitimacy theories that conditioned a firm's value only its ability to respond to the self-interests of its immediate stakeholders. This moral legitimacy is also reflected in theories developed by CSR scholars on how society's value systems and the related societal demands are to guide firm behavior and performance measurements (Swanson, 1999; Wood, 1991). Swanson (1999) thereby categorizes firm behavior into value neglect when normative myopia leads to a value-inert culture and value-restricted detection of social issues and value attunement when normative receptivity leads to value-discovery culture and value-expanded detection of social issues.

Over the last two decades, CSR scholars have continued to redirect traditional management theory from profit maximization based on self-interests to social value creation based on cooperation and reciprocity (for overviews, see Aguilera, Rupp, Williams, & Ganapathi, 2007; Aguinis & Glavas, 2012; Bansal & Song, 2017). One theoretical field seems, however, to have been limitedly challenged and redirected: innovation management and its related theories of knowledge management. Although in innovation management several traditional ideas were challenged in the last decade – for example open innovation scholars challenging the notion that knowledge is to be created

and kept within the walls of the firm (Chesbrough, 2006) and absorptive capacity theory indicating that the competitive advantage of a firm is not dependent on the knowledge itself but its capabilities to assimilate and transform the knowledge (Zahra & George, 2002) – the traditional idea that innovation is only valuable when it contributes to a firm’s profitability has only limitedly been challenged.<sup>3</sup> If commercial innovation management is not driven by profit maximization but by social value creation – as committed to by the Business Roundtable – what knowledge would a firm need to absorb to achieve this outcome? Which capabilities would a firm need to absorb this knowledge? For example, CSR scholars have indicated that there are significant differences between technical and social ‘ways of knowing’ (Hahn, Pinkse, Preuss, & Figge, 2016). Furthermore, if competitive advantage is no longer the purpose of innovation, can collaboration between firms support them in overcoming the barriers created by traditional thinking in the market and the dynamics in society? This dissertation aims to answer these questions in order to connect the innovation management literature with the new view of a firm as legitimate actor when responsive to society’s value system and thereby support the redirection of innovation towards social value creation.

Recently, the editor of the Financial Times wrote when introducing the new agenda of his newspaper: “Free enterprise capitalism has shown a remarkable capacity to reinvent itself. [...] Today, the world has reached that moment. It is time for a reset.” (Barber, 2019). With this dissertation, I aim to contribute to the reset of commercial innovation theory.

### 1.2.2 Innovation for social value creation

The question on how an innovation process should be adjusted to create more socially responsible outcomes and thus more social value, has been addressed previously but outside the business management literature. Building on theory and case studies on research governance and research ethics, scholars in RRI point out that an innovator should make sure that its innovation is societally desirable and (ethically) acceptable, otherwise the innovation could provide harm to society (Von Schomberg, 2013). In directing innovation towards societally desirable outcomes, RRI scholars focus on the innovation process instead of the outcomes for two reasons. First, the novel nature makes the impact of innovation outcomes uncertain and, in case of radical innovation, even unpredictable (Guston, 2008). As indicated by Suchman (1995), when there is an absence of clear outcomes to evaluate the legitimacy of an actor, the practices themselves can be

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<sup>3</sup> For a review and critical reflection on how social and sustainability-oriented innovation literature partially take up this challenge, please see Lubberink, Blok, van Ophem, & Omta (2017a, 2017b).

evaluated to demonstrate the good intentions and efforts of the actor. Second, what is societally desirable is not easy to define and the definition might change over time when new knowledge regarding the innovation becomes available (see for example Dignum, Correljé, Cuppen, Pesch, & Taebi, 2015). RRI scholars have thus investigated on how to make the innovation process more morally legitimate by conceptualizing RRI as *innovation for and with society* (Owen, Macnaghten, & Stilgoe, 2012). The *for society* aspect of RRI emphasizes the need for innovation to contribute to solutions of the large societal issues by democratically opening up discussions on the direction of innovation (Owen et al., 2012; Von Schomberg, 2013). The *with society* aspect emphasizes the inclusion of societal actors to anticipate expectations and possible impacts of innovation and to reflect on underlying purposes, motivations, (un)available knowledge and assumptions in the innovation process (Owen et al., 2012).

To further operationalize the *innovation for and with society* concept, two frameworks have been developed. First, based upon case studies on the governance of innovation in public-private partnerships, Stilgoe et al. (2013) developed a framework with four dimensions: 1) anticipation, 2) reflection, 3) inclusion (later referred to as inclusive deliberation (Owen et al., 2013)), and 4) responsiveness. Using this framework, a multitude of studies have provided valuable insights on innovation governance (see Burget, Bardone, & Pedaste, 2017; Macnaghten et al., 2014), but the majority of these studies took part in academic settings or in multi-stakeholder platforms (Blok & Lemmens, 2015). By not investigating the implementation of the four-dimension framework within firms, the potential conflicts between the RRI dimensions and the conditions for commercial innovation have not been thoroughly investigated (Blok & Lemmens, 2015).

Second, the connection between the RRI concept and engineering ethics led to a further development of a three-step framework called Value Sensitive Design (VSD), based upon the notion that values and norms in society needed to be translated to design requirements in order to be taken up in innovation processes (Nissenbaum, 2005; Van de Poel, 2013). Since VSD scholars agree with CSR scholars on the importance of society's value system for determining responsible action and its three-step framework reflects the design thinking that is very prominent in commercial innovation, the concept of VSD has the potential to provide answers to the research questions of this dissertation. However, the results of empirical investigations into VSD have been limited to identifying the conflicts that arise between societal actors on the translation of values and does not provide handholds for firms to solve these conflicts (Dignum et al., 2015; Manders-Huits, 2011).

To conclude, application of the ideas of RRI scholars to commercial innovation settings could support the redirection of innovation management theories towards social value creation, but further conceptualization and empirical investigations are needed to explore the exact handholds RRI can offer for this redirection.

### 1.2.3 Innovating food products for a healthier society

To conduct the aforementioned empirical investigations, a particular grand challenge was selected. Grand challenges are complex issues in society “characterized by many interactions and associations, and nonlinear dynamics”, which “evolution [is] difficult to forecast” and which are evaluative in nature, cutting “across jurisdictional boundaries” and revealing “new concerns even as they are being tackled” (Ferraro et al., 2015, p. 365). Typical examples of grand challenges are the issues targeted by the Sustainable Development Goals, an ambitious agenda drawn up by the members of the United Nations “to take action in order to guarantee a sustainable future for the planet as a whole and the people inhabiting it” (Voegtlin & Scherer, 2017). These seventeen goals thereby define what the global community considers a societally desirable future and the social value that should be created to achieve this future are captured in the 169 targets underlining these goals.

The current epidemic of non-communicable diseases (NCDs) is the subject of one of these targets: target 3.4 “By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being” (United Nations General Assembly, 2015). During the last decades, the worldwide prevalence of NCDs – such as type 2 diabetes and cardiovascular disease – has increased enormously and have become one of the main public health issues worldwide (Swinburn et al., 2013; World Health Organization, 2017). As indicated in target 3.4, NCDs can be prevented and one of the main prevention methods is the adjustment of the daily diet (Swinburn et al., 2013). Since firms do not only act as innovators but also as the diffusers of innovation, food manufacturing firms are seen as the main catalyzer of innovative solutions for preventing these diet related NCDs (Pinkse & Kolk, 2010; Scott, Hawkins, & Knai, 2017; Tempels, Verweij, & Blok, 2017). At the same time, these firms are also seen as catalyzers of problem, being involved in interactions related the many causes of the NCD epidemic: psychological mechanisms of eating behavior, socio-economic determinants of purchase behavior and the economic dependencies in the global agri-food sector (Tempels et al., 2017; World Cancer Research Fund International, 2013). For that reason, the public pressure on food firms to take responsibility for their role in this societal challenge has also been growing (Maloni & Brown, 2006; Nestle,



2007; Stuckler & Nestle, 2012). In particular, this grand challenge asks food manufacturers to redesign their products and disseminate health-conscious alternatives (Scott et al., 2017).

This situation of food manufacturers – referred to in this dissertation as food firms – responding to the NCD crisis through their product innovation provides several characteristics and dynamics which makes this case relevant for our research objectives. First, the role of the food firms in causing the NCD crisis can be traced back to their response to situations of moral overload (Van den Hoven, Lokhorst, & Van de Poel, 2012). Market demand is determined by consumer purchase behavior and that behavior is determined by a consumer's value system. However, there might not be a product that satisfies all values to the same level and consumers do not have the time nor the expertise to look for a product that takes into account all of their values. In these situations, consumers are faced with moral overload, which often leads to trade-offs between values. The final purchase decision thus reflects only a limited set of values, especially regarding fast-moving consumer goods such as food products. Instead of helping the consumer to overcome these situations by developing products that comply to complete value system of the consumer, the majority of the food firms chose to invest their innovation budgets in becoming experts in serving the limited set of values that determine purchase behavior. An illustration is the “hyperpalatable” food products of which flavor and structure properties have been perfected to fulfil the value ‘enjoyment’ (Tempels et al., 2017). However, the negative effects of their focus on a narrow set of values and their partial neglect of values such as ‘health’ are now showing in the shape of the NCD crisis.<sup>4</sup>

This example of value neglect – described by Swanson (1999) – combined with the public pressure on food firms to broaden their value system, provides the right conditions for investigating the absorption of societal values by firms. Furthermore, the attention on product innovation as a way of acting on the societal value ‘health’ allows investigation into the strategies that firms use to handle conflicts between multiple values – referred to as inter-value conflicts (Dignum et al., 2015). In empirically investigating the innovation behavior of the food firms, several elements of innovation management will be analyzed using diverse methodologies, as described in the next section.

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<sup>4</sup> While immediate negative health effects of specific food products are corrected by the government through food safety laws, regulation correcting of the negative health effects of long-term consumption of a combination of food products so far is minimal. One of the reasons for this lack of regulation could be the ‘problem of many hands’, similar as described by Van de Poel et al. (2012) for the issue of climate change.

## 1.3 Aim and contribution of this dissertation

This dissertation aims to continue the redirection of the innovation management literature from the purpose of profit maximization towards the creation of social value. The main research is therefore: *How can commercial innovation management be redirected towards social value creation?* This question will be answered by connecting elements of innovation management theory to the frameworks and concepts presented in the RRI and CSR literature. These theoretical connections will be grounded empirically by investigating the handholds that are present and needed in firms to make commercial innovation responsive to society's value system and thereby support social value creation.

As this dissertation cannot cover all theories and frameworks related to commercial innovation management, a selection has been made. The following elements of innovation management are taking up in the three objectives of this dissertation:

- 1) identify and classify the motives of firms to create social value through their product innovations;
- 2) identify organizational capabilities required by firms to absorb societal values in innovation processes;
- 3) determine the role of external standards for stimulating social value creation through innovation.

These objectives will guide the remaining five chapters of this dissertation.

### 1.3.1 Outline of this dissertation

#### *Chapter 2*

The first element of innovation theory that requires redirection is the purpose of innovation itself. The objective of chapter two is to show which motives are present in firms to create social value through their product innovation and how these motives can be classified into several categories. To achieve this objective, a multiple-case study was conducted to investigate the motives of food firms for healthier product innovation through interviews with several managers involved in the product innovation process. By analyzing these motives for responsible innovation, the study aims to show how which motives are present in firms and how they determine innovation strategy of a firm and thus the criteria by which firms predicts and evaluates the success of their products innovations.

### *Chapter 3*

One of the most important elements determining the innovativeness of a firm is its organizational capabilities to absorb knowledge from its external environment. Chapter three shows how the narrow view of traditional innovation management theory has also limited the scope of the main theory on knowledge absorption, Absorptive Capacity (AC). The objective of chapter three is to develop a new theoretical framework that answers the question: how do firms absorb knowledge about societal values for their innovation processes? To ground this new framework both in theory and practice, a comparative case study of eight firms in the food industry is conducted. Using interviews and corporate reports to analyze how organizations prioritize and operationalize the societal value 'health' in product innovation while navigating inter- and intra-value conflicts, this chapter initiates the development of a new theory on Value-sensitive Absorptive Capacity (VAC)

### *Chapter 4*

To continue redirection of the knowledge absorption capabilities towards social value creation, chapter four aims to further substantiate the VAC framework, developed in chapter three. For this substantiation, the three VAC dimensions are transformed in a survey-based instrument. The construct and concurrent validity of this instrument is explored in an empirical study among 30 food firms, asking 109 managers involved in product development how their firm is capable to receive, articulate and reflect upon the value 'health' during its product innovation process. By developing this instrument, we aim to provide RRI and innovation management scholars with concrete instruments to further investigate the capabilities firms need act upon societal values and create social value through innovation.

### *Chapter 5*

Although firms might have the motive and the capabilities to innovate socially responsible, they are limited still limited by the conditions of the market. The final study presented in this dissertation, therefore, explores how collaborations in defining societal values can support firms in social value creation through innovation. The theoretical lens chosen for this study is voluntary standardization of business practices, discussed both in commercial innovation literature as well as in CSR literature. Since CSR standards have shown to give firms clarity on how to translate a particular societal value to design requirements for their business practices, such standards could play a role in redirecting innovation towards social value creation. However, in order to ensure that socially desirable practices are incorporated in firm behavior and effectively create social value,

standards need endure over time and thus need to respond to the dynamics of society. One of the ways in which standardization organizations respond to these dynamics is by revising the content of their standards. In this chapter, this long-term endurance of standards and their effectiveness in redirecting innovation towards social value creation is further investigated by studying the effects of standards' revision in case of a front-of-pack label indicating the healthiness of food products. By using a multi-level data containing both product level and firm level variables, different types of revisions are compared on their impact on both social value creation by and compliance of firms.

## *Chapter 6*

The final chapter indicates how each of the studies presented in this dissertation support the achievement of the three objectives and thus contribute to the overall aim of the dissertation. Besides discussing how the main aim of this dissertation was achieved, the chapter also sheds light on how this dissertation contributes to the redirection of innovation management theory towards social value creation. To stimulate business scholars to continue work on this redirection, the dissertation provides guidance in which elements of innovation management theory needs further assessment and what such an assessment should look like. In the end, this dissertation would not be complete without its own creation of social value and thus this chapter ends with a set of implications for practice, in particular for the food industry and its responsibility for public health.

## Chapter 2.

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### RESPONSIBILITY VERSUS PROFIT: THE MOTIVES OF FOOD FIRMS FOR HEALTHY PRODUCT INNOVATION

#### Abstract

In Responsible Research and Innovation (RRI), innovation is seen as a way in which humankind finds solutions for societal issues. However, studies on commercial innovation show that firms respond in a different manner and at a different speed to the same societal issue. This study investigates what role of organizational motives play in product innovation processes of firms when aiming for socially responsible outcomes. Through a multiple-case study we investigate the motives of food firms for healthier product innovation by interviewing firms about the organizational motives behind product reformulation and innovation. The results of the study highlight the importance of having *both* instrumental and moral motives in the innovation process when aiming socially responsible outcomes, and how both these motives interact and contribute to responsible innovation in industry. Furthermore, the study results question the nature of relational motives as a separate category from the other two categories of motives, as suggested by CSR scholars. In conclusion, if commercial innovation needs to contribute to solutions for societal issues, the importance of moral motives has to be stressed without annihilating the instrumental objectives of firms. Both motives contribute to the success factors of responsible product innovation in industry.

This chapter is published as:

Garst, J., Blok, V., Jansen, L., & Omta, O. (2017). Responsibility versus Profit: The Motives of Food Firms for Healthy Product Innovation. *Sustainability*, 9(12), 2286. <https://doi.org/10.3390/su9122286>

## 2.1 Introduction

During the last decades, the worldwide prevalence of diet-related non-communicable health issues, such as obesity and type 2 diabetes, increased enormously. For that reason, the public pressure on food firms to take responsibility for their role in this societal issue has also been growing (Maloni & Brown, 2006; Nestle, 2007; Stuckler & Nestle, 2012). That the type of response to this pressure can differ significantly between food firms can be illustrated by the removal of Trans Fatty Acids (TFAs) by the food industry. From the 1960s until the 1990s, TFAs were one of the most popular food ingredients: cheaper, more flexible in use and with a longer shelf-life than other fats, and seen as healthier than saturated fats, which were shown to elevate cholesterol levels and thus to increase cardiovascular disease risk (Eckel, Borra, Lichtenstein, & Yin-Piazza, 2007). In 1990, however, a new study showed that TFAs actually increase the risk for cardiovascular disease – even more than saturated fats (Mensink & Katan, 1990). Although follow-up studies confirmed these results, only a few firms responded directly by making R&D investments to replace TFAs and they had their products TFA free by the beginning of the 2000s (Eckel et al., 2007). After 2003, when new regulations on TFAs were put in place, a second wave of firms removed TFAs from their products (Eckel et al., 2007; European Commission, 2015; Nestle, 2007). A third wave of firms acted after several lawsuits from US advocacy groups in 2006 (Nestle, 2007). In 2015, the last firms acted after a US ban on industrial TFAs and the EU Commission recommending legal limits to TFAs in food (European Commission, 2015). The TFA case illustrates that firms can respond in a different manner and at a different speed to the same societal issue, showing four modes of corporate responsiveness: Proactive; Accommodative; Defensive; Reactive (A. B. Carroll, 1979; Clarkson, 1995). Over the years the proactive mode of ‘doing more than is expected’ (Crane & Matten, 2007, p. 53) has turned out to be most preferred by CSR scholars and policy makers alike and has been turned into tools and rankings (Aguilera et al., 2007).

Although these modes of responsiveness help to categorize firm behavior in respect of their social responsibility, thinking in these modes has also been seen as limiting the concept of CSR. Carroll (1979, p. 502) already indicated that the modes of responsiveness have “no moral or ethical connotations” but are “concerned only with the managerial processes of response.” These moral or ethical connotations are important to be able to distinguish between firms that proclaim to conduct pro-active CSR but are actually only using CSR activities as window-dressing, and firms that have their social responsibility incorporated in their business purpose and thus are in a constant pro-active mode

(Aguilera et al., 2007). These moral or ethical connotations are reflected by a firm's motives for its behavior, also referred to as organizational values which "are first-order conditions that define [...] what are acceptable means of achieving an outcome – and the outcomes themselves" (Bansal, 2003, pp. 519–520). Although sometimes reflecting personal motives of the leadership team and influencing personal motives of employees, these firm-level motives are distinct from individual-level motives as they are absorbed in the organizational culture and thus are present throughout the organization (Aguilera et al., 2007; Hemingway & MacLagan, 2004). The organizational motives of a firm for CSR determine processes like the issue identification, issue selling and issue response of a firm (Bansal, 2003). Therefore, to assess a firm's CSR behavior, also their motives to perform this behavior need to be taken into account. Although many scholars have further specified the motives for CSR (Aguilera et al., 2007; Bansal & Roth, 2000; A. B. Carroll & Shabana, 2010; Wood, 1991), the investigation of the connection between the different motives and CSR behavior is mainly limited to conceptual papers and studies using proxy-measures for CSR outcomes – such as data from databases regarded as questionable sources – instead of actual CSR outcome data – such as the number of socially responsible products (Aguilera et al., 2007; R. J. Carroll, Primo, & Richter, 2016; Wood, 2010). The question, therefore, remains how the different kind of motives play a role in the firm's decisions to adjust or not adjust its behavior to create more socially responsible outcomes.

In this article, we explore this question in the area of food firms and their product innovation behavior for improvement of public health. New product development is a main business practice and is increasingly seen as an important part of a firm's CSR strategy (Matten, Crane, & Moon, 2007). CSR scholars have previously investigated product innovation in studies on eco-innovation but focused mostly on how it can contribute to a firm's financial performance (Pujari, 2006) or how the government should regulate it (Rennings, 2000). The question on how an innovation process should be adjusted to create more socially responsible outcomes is actually taken up outside the CSR literature by the emerging concept of Responsible Research and Innovation (RRI) (Stilgoe et al., 2013; Von Schomberg, 2011). The RRI scholars indicate that, among others, increased stakeholder engagement during the innovation process could facilitate socially responsible innovation outcomes (Owen et al., 2013; Sykes & Macnaghten, 2013). Still, even when the RRI processes are implemented, RRI scholars indicate that the motives of the innovator could determine whether the outcomes are as socially responsible as desired or not (Stirling, 2007; Sykes & Macnaghten, 2013). For firms, these RRI processes could interfere with the original motive for innovation, which is to gain

a competitive advantage (Blok & Lemmens, 2015; Tidd, Bessant, & Pavitt, 2005). Therefore, in the current article the following research question will be answered: What is the role of organizational motives in product innovation processes of firms when aiming for socially responsible outcomes?

To answer this question, a study design was implemented to specifically avoid desirability bias, which is common in studies on motives for socially responsible behavior (Krefting, 1991; Windolph, Harms, & Schaltegger, 2014). Our multiple case study started from quantitative data on actual innovation behavior of eight food firms in the Netherlands regarding diet-related health issues and then collected qualitative data from the firms on their motives for the decisions made. In this article, first, a theoretical framework is presented providing an overview of possible motives for CSR in innovation processes, based on a literature review in the fields of innovation management, CSR and RRI. Second, the quantitative and qualitative data collection and analyses are explained in the methods section. Third, the results and discussion of the multiple case study is presented, discussing a) the empirical exploration of the theoretical framework; b) the exploration of the interaction between motives for innovation and actual innovation behavior.

## 2.2 Theoretical framework

Many scholars have investigated CSR motives and several typologies and inventories have been made (Aguilera et al., 2007; Bansal & Roth, 2000; Basu & Palazzo, 2008; Brønn & Vidaver-Cohen, 2009; A. B. Carroll & Shabana, 2010; Gardberg & Fombrun, 2006; Graafland & Mazereeuw, 2012; Hemingway & MacLagan, 2004; Windolph et al., 2014). However, little of these studies have linked the identified motives to actual firm behavior, focusing mostly on self-reported behavior in CSR reports and interviews (Bansal & Roth, 2000). What the great number of studies on CSR motives do provide is a foundation for empirically investigating this gap. In this theoretical framework, we present an overview of the CSR motives most observed by CSR scholars and reflect upon their use in innovation practices, as presented by innovation management scholars and RRI scholars. In analyzing the multiple inventories of CSR motives, it quickly became clear that although there are differences in names and definitions, the CSR scholars have agreed that there are three types of CSR motives. In our framework, we use the following concepts to distinguish them: 1) instrumental motives; 2) relational motives; 3) moral motives.



### 2.2.1 Instrumental motives

The first set of motives is derived from the view on the role of firms in society of Friedman: “the only one responsibility of business towards society is the maximization of profits to the shareholders within the legal framework and the ethical custom of the country” (M. Friedman, 1970). In response to this view, many scholars have argued that acting upon social responsibilities through CSR activities can be beneficial to the profitability of a firm, an approach also referred to as the ‘business case for CSR’ (Kurucz, Colbert, & Wheeler, 2008), and the subsequent theories as ‘instrumental theories of CSR’ (Garriga & Melé, 2004). These theories are driven by the questions: how do firms benefit from CSR activities and how do the CSR activities contribute to the survival of the firm? (A. B. Carroll & Shabana, 2010; Wood, 1991). That these theories are quite popular within the CSR field is reflected by the many empirical studies on the influence of CSR activities on Corporate Financial Performance (CFP), finding a limited to no effect (Margolis & Walsh, 2001; Orlitzky, Schmidt, & Rynes, 2003; Zhao & Murrell, 2016).

These instrumental theories have also been translated into practice, as can be seen by the instrumental motives for corporate socially responsible behavior identified in empirical studies (Bansal & Roth, 2000; Brønn & Vidaver-Cohen, 2009; Graafland & Mazereeuw, 2012; Windolph et al., 2014). Motives that are categorized as instrumental, are characterized as serving self-interest (Aguilera et al., 2007; Crane & Matten, 2007) and as being derived from external incentives and thus extrinsic by nature (Basu & Palazzo, 2008; Frey & Jegen, 2001). These instrumental motives can be divided into motives for short-term outcomes and long-term outcomes (Aguilera et al., 2007). When focusing on short-term outcomes, the firm is motivated by direct effects on its profitability (Aguilera et al., 2007), for example by reducing (production) costs (Bansal & Roth, 2000; Windolph et al., 2014); or by increasing sales through cause-related marketing (Bansal & Roth, 2000; Garriga & Melé, 2004). Other instrumental motives are more concerned with the long-term survival of the firm, thus aiming for postponement of legislation (Brønn & Vidaver-Cohen, 2009; Crane & Matten, 2007; Davis, 1973), creation of a favorable business environment (Davis, 1973; Hemingway & MacLagan, 2004; Kurucz et al., 2008), or attraction and preservation of employees and investors (A. B. Carroll & Shabana, 2010; M. Friedman, 1970). An example of a CSR activity seen as driven by the motive to postpone legislation is voluntary self-regulation, which is common in the food industry with regard to diet-related, non-communicable diseases (Stuckler & Nestle, 2012).

When instrumental motives are concerned with the external environment, most scholars combine them into one motive: the desire to maintain a firm's legitimacy (A. B. Carroll & Shabana, 2010). Suchman's definition of legitimacy is one of the most used by CSR scholars: "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (Suchman, 1995, p. 574). His call to distinguish between different types of legitimacy, however, has been given far less attention (Basu & Palazzo, 2008). In our framework, we use his concept of pragmatic legitimacy, defined as "self-interested calculations of an organization's most immediate audiences" (Suchman, 1995, p. 578), to indicate the long-term instrumental motive of maintaining a positive reputation. The other types of legitimacy presented by Suchman are linked to the other types of CSR motives (Basu & Palazzo, 2008) and will be discussed in the subsequent sections.

### 2.2.2 Moral motives

On the opposite site of the instrumental motives are the moral motives, which are derived from ethical or normative theories regarding the role of firms in society (Basu & Palazzo, 2008). These theories understand "that business, as with any other social group or individual in society, has to contribute to the common good, because it is a part of society" (Garriga & Melé, 2004, p. 62). As any person or entity in society, a firm requires to comply with socio-cultural norms and its activities are judged according to a socially constructed value system (Davis, 1973; Suchman, 1995). When this judgement is positive, the firm gains moral legitimacy (Suchman, 1995). Moral legitimacy differs from the other forms of legitimacy as it "rests not on judgments about whether a given activity benefits the evaluator, but rather on judgments about whether the activity is 'the right thing to do'" (Suchman, 1995, p. 579).

With its focus on the 'right thing to do' rather than the benefits of the activity, moral legitimacy is at the foundation of moral motives. As defined by CSR scholars, moral motives are intrinsic, meaning that firms with moral motives conduct CSR activities not for possible benefits but as an end in itself (Aguilera et al., 2007; Frey & Jegen, 2001; Graafland & Mazereeuw, 2012). Most CSR scholars indicate that moral motives are derived from a moral obligation perceived by the firm and its individual employees (Aguilera et al., 2007; Bansal & Roth, 2000; Brønn & Vidaver-Cohen, 2009; Garriga & Melé, 2004; Graafland & Mazereeuw, 2012). In practice, this moral obligation is translated into the need to provide a positive impact to society and prevent or fix any negative impacts (Crane & Matten, 2007; Wood, 1991); the need to give back to society

by supporting societal welfare and local communities (A. B. Carroll & Shabana, 2010; Garriga & Melé, 2004); the need to invest in making the world a better place for future generations (Bansal & Roth, 2000; Brønn & Vidaver-Cohen, 2009; Graafland & Mazereeuw, 2012).

Although CSR scholars acknowledge the distinction between instrumental and moral motives, the boundaries between them can sometimes be vague (Brønn & Vidaver-Cohen, 2009; Graafland & Mazereeuw, 2012; Hemingway & MacLagan, 2004). To distinguish the moral motives, we use the five conditions of moral responsibility. These conditions “should be met in order for someone to be held properly or fairly responsible” (Van de Poel & Fahlquist, 2012, p. 884). When talking about their response to a social issue, we theorize firms will refer to one or more of the five conditions of their moral responsibility, which are defined by Doorn (2012b) as a) moral agency; b) causality; c) knowledge of the consequences; d) transgression of a norm; e) voluntariness or freedom (see Table 2.1 for the operationalization of these conditions).

### 2.2.3 Relational motives

The last type of CSR motives are the relational motives, which are related to the so-called integrative theories of CSR that integrate both the need for the firm to survive and the duty of the firm to adhere to social norms (A. B. Carroll & Shabana, 2010; Garriga & Melé, 2004). For its long-term survival, a firm is dependent on other societal actors and thus the firm cannot take from these actors without giving back, also called stakeholder retribution (Matten & Crane, 2005). In these reciprocal relationships between firms and their stakeholders, the role of a firm is to exploit its unique resources and capabilities to serve societal interests, and thus minimize negative impact and support societal progress (A. B. Carroll & Shabana, 2010; Hasnas, 1998). This process is also referred to as synergistic value creation – creating win-win outcomes by trading off some of the firm’s profits for creating not only economic value, but also social and environmental value (A. B. Carroll & Shabana, 2010; Kurucz et al., 2008). When a firm is driven by relational motives, its activities are influenced by the values and beliefs of its stakeholders (beyond its shareholders and its customers) and thus maintain their relationships (Aguilera et al., 2007).

According to CSR scholars, legitimacy is a core aspect of relational motives, but their descriptions specifically relate to Suchman’s concept of ‘cognitive legitimacy’. This kind of legitimacy goes beyond pragmatic legitimacy by focusing on actively aligning the firm’s outputs to societal demands to gain a social license to operate (Basu & Palazzo, 2008; Suchman, 1995). This social license is only granted if society accepts the way in which a

firm balances the expectations of its many stakeholders, which are often ill-defined, conflicting and inconsistent (Aguilera et al., 2007; A. B. Carroll & Shabana, 2010). Suchman (1995) indicates that, in the majority of the cases, cognitive legitimacy is not achieved at firm level but at industry level with models or standards. It is thus not surprising that several CSR scholars have linked cognitive legitimacy and relational motives to industry action in formalizing standards or other self-regulation measures (Aguilera et al., 2007; Basu & Palazzo, 2008). If these standards are not formalized, firms can try to get cognitive legitimacy by mimicking other firms' CSR activities (Bansal, 2005; Basu & Palazzo, 2008), creating a type of informal industry standards. In empirical research these motives are translated into the desire to fulfil stakeholder expectations (Brønn & Vidaver-Cohen, 2009; Windolph et al., 2014), in feeling institutional pressures of self-regulations (Aguilera et al., 2007; Basu & Palazzo, 2008; Windolph et al., 2014), or into the desire to be recognized for moral leadership (Brønn & Vidaver-Cohen, 2009).

#### 2.2.4 CSR motives and innovation practices

The reason that many CSR scholars have investigated and categorized the CSR motives is because motives influence whether and how a firm acts upon its social responsibility towards society. But which motives determine which behavior and how do these motives interact with each other during decision making processes? These are topics that have been researched only limitedly (Aguilera et al., 2007; Hamann, Smith, Tashman, & Marshall, 2017). One business practice suitable for studying decision making processes is product innovation. During product innovation, decisions are often made under uncertain conditions and thus based upon assumptions on unpredictable outcomes. Although bringing so much uncertainty, a firm cannot survive without innovation, because, as described by Schumpeter's (1943) classical notion of 'creative destruction', a firm in a capitalist market is always under threat of other firms introducing new products or processes in the market that undermine the existing products and processes, and thus destruct their market share. To stay ahead of the competition and survive in the market is therefore the traditional motive of firms to conduct innovation.

**Table 2.1** Overview of CSR motives

<i>Motives</i>	<i>Focus of interest</i>	<i>References</i>
<i>Instrumental</i>		
Reducing (production) costs	Corporation, short-term	(Bansal & Roth, 2000; Windolph et al., 2014)
Increasing sales through cause-related marketing		(Bansal & Roth, 2000; Garriga & Melé, 2004)
Postponement of legislation	Corporation, long-term	(Brønn & Vidaver-Cohen, 2009; Crane & Matten, 2007)
Creating a favorable business environment		(Davis, 1973; Hemingway & MacLagan, 2004; Kurucz et al., 2008)
Attracting and maintaining employees and investors		(A. B. Carroll & Shabana, 2010; M. Friedman, 1970)
<i>Relational</i>		
Fulfilling stakeholder expectations	Direct stakeholders	(Brønn & Vidaver-Cohen, 2009; Windolph et al., 2014)
Responding to pressures of voluntary self-regulation		(Aguilera et al., 2007; Basu & Palazzo, 2008; Windolph et al., 2014)
Being recognized for moral leadership		(Brønn & Vidaver-Cohen, 2009)
<i>Moral</i>		
Moral agency – the firm considers itself an intentional agent the long-term health impact of its products.	Society	(Doorn, 2012b)
Causality – the firm considers its innovation activities as part of the cause of the long-term health impact its products.		(Crane & Matten, 2007; Doorn, 2012b; Wood, 1991)
Knowledge of the consequences – the firm has knowledge about the long-term health impact of its product innovations or makes efforts in collecting that knowledge.		(Doorn, 2012b)
Transgressing the norm – the firm considers its product innovations and their long-term health impact to be crossing a societal norm.		(Doorn, 2012b)
Freedom to act – the firm can act upon the long-term health impact of its product innovations without external constraints.		(Doorn, 2012b)

This traditional motive for innovation would be classified as an instrumental motive by CSR scholars. However, coming from disciplines such as science and technology studies, RRI scholars indicate that innovation can also be seen as a way in which humankind

finds solutions for societal issues (Von Schomberg, 2013) and even as a moral obligation when it leads to moral progress (Van den Hoven, 2013). In framing innovation in such a manner, RRI scholars suggest that innovation can (and even should) be driven by moral motives. This preference of moral motives can also be seen in the main approaches in RRI, which show similarities with the three ways to evaluate moral legitimacy: evaluations of techniques and procedures, evaluations of outputs and consequences, and evaluations of categories and structures (Suchman, 1995). The framework of Stilgoe et al. (2013) can serve as example of the first category, describing four dimensions of RRI – anticipation, reflexivity, inclusion and responsiveness – which show how to make the innovation process more responsible. These dimensions can be seen as evaluating the characteristics of innovation processes and thus creating procedural moral legitimacy for innovators.

An example of the second category is Von Schomberg's (2013) emphasis on evaluating innovation outcomes on their ethical acceptability, societal desirability and sustainability. This can be seen as evaluating outputs and consequences and thus creating consequential moral legitimacy. The third category is exemplified by the creation of criteria and standards for innovation policies, which can be seen as evaluating categories and structures and thus creating structural moral legitimacy (Lindner et al., 2016). This emphasis on moral legitimacy and thus the preference for moral motives in RRI, is also confirmed by an article of Stirling (2007) on stakeholder engagement, in which he indicates that instrumental motives lead to 'closed off' dialogues with pre-determined outcomes which do not promote integration of societal values into innovation processes, a main purpose of RRI (Sykes & Macnaghten, 2013). In other words, RRI scholars emphasize the limitations of instrumental motives and highlight the importance of moral motives in order to achieve responsible innovation outcomes.

A possible reason why RRI scholars seem convinced of the preference of moral motives over the relational and instrumental motives, is because their main field of research has been non-commercial research and innovation, such as academic research (Blok & Lemmens, 2015; B. Stahl et al., 2017). Other studies on RRI in business have indicated that instrumental motives are far more prevalent when the innovation is implemented in a commercial setting (Blok, Tempels, Pietersma, & Jansen, forthcoming; Lubberink, Blok, van Ophem, & Omta, 2017a).

Also, in the field of CSR, scholars have not yet reached consensus on the necessity of moral motives for socially responsible outcomes. In some studies, the moral motives seem to drive CSR decision making (Graafland & Mazereeuw, 2012; Hamann et al., 2017),

while in other studies, instrumental and relational motives are indicated as more relevant (Brønn & Vidaver-Cohen, 2009). CSR scholars also acknowledge that the search for moral legitimacy does not always lead to socially responsible outcomes, referring to these activities as ‘greenwashing’ and ‘window dressing’ (Laufer, 2003; Wood, 2010), in which hollow symbolic gestures are made instead of actual socially responsible action (Suchman, 1995). This means that moral motives might be present in the firm, but their effect on innovation processes depends upon whether and how they are taken up in the firm’s processes (Swanson, 1999; Wood, 1991).

In the end, CSR scholars indicate that the motives for socially responsible behavior should not be investigated as independent of each other. As mentioned by Bansal & Roth and reconfirmed by a recent study (Hamann et al., 2017), different motives can co-exist in a firm and interaction between these motives in decision making processes is unavoidable. For example, in the TFA case, the moral action of food firms would be to remove the TFAs from their products as soon as their negative health effects became known, but that would conflict with the instrumental motives for using TFAs as a cheap and versatile ingredient. Replacing TFAs would thus drive up the price of the product, decreasing product sales and thus not achieving the positive societal impact intended. How firms handle these interactions between motives and the effect on the innovation process and outcomes is not yet investigated, which is why it was the subject of our multiple-case study on healthy product innovation in Dutch food firms.

## 2.3 Method and materials

To answer this research question, a multiple-case study method was chosen. Because of replication logic, a multiple-case study allows for comparison among cases, which strengthens precision, validity and stability of our findings (Eisenhardt, Graebner, & Sonenshein, 2016; Miles & Huberman, 1994). In addition, a qualitative design with both inductive and deductive elements was used, which allows us to extend the limited theory on RRI in industry and to elaborate the existing theory on CSR motives towards the domain of product innovation (Pratt, 2008, 2009).

### 2.3.1 Context and case selection

To investigate differences between firms in their responses to social responsibilities with product innovation, we chose to focus specifically on the food industry in the Netherlands and a particular social issue within this industry: the increase diet-related non-communicable health issues. In this manner, we ensured that any variety in responses is related to differences between firms and not to industry- or country-related

differences or divergent characteristics of social issues. To ensure that our cases had experience with product innovation related to our particular societal issue, we selected the firms from a database of the Dutch Choices Foundation. Since 2006, this foundation has coordinated the voluntary front-of-pack health logo, named Choices logo. To be allowed to place the Choices logo on their products, firms needed to be a member of the foundation and their products needed to comply with a nutrient profile, specified for 22 product categories (e.g. bread; processed fruits). These criteria were developed in 2006 with regard to the prevention of diet-related non-communicable health issues and were revised by an independent scientific committee in 2007, 2010 and 2015 to stimulate product innovation (Roodenburg, Popkin, & Seidell, 2011). Product information of all products certified between 2006 and 2016 was collected in a database.

With the database we were able to purposefully sample firms that complied with following criteria: a) have more than 6 year experience with product innovation for healthy food, allowing for a minimum of two innovation cycles per firm (Omta & Folstar, 2005); b) target the Dutch end-consumer with at least one product under their own brand to prevent firms shifting responsibility to their trade partners; c) were still member of the Choices Foundation at time of data collection to allow for real-time study of innovation processes. Within this specific sample, we wanted to ensure a maximum variation in both firm characteristics – e.g. size and type of firm – and firm behavior – e.g. number of products certified and certification in one or multiple product categories. The variation allowed for grounding of single-case findings by comparing these findings with contrasting cases (Miles & Huberman, 1994). In the end, we selected eight cases of which two retailers developing products for their private label and six food manufacturers. Several firms also developed products for other food firms (co-pack). In Table 2.2 an overview of the selected cases and their characteristics can be found.

### 2.3.2 Data collection and analysis

To collect data an interview guide for semi-structured interviews was developed, based on a literature review. The questions in the guide focused on the innovation process, asking specifically about decision making moments in the different phases of the innovation process concerning products that were certified with the Choices logo. After the development of the general guide, a more case-specific interview guide with examples of product innovation behavior for each case was developed based on three sources: a) product innovation data of the firms from the Choices database, focusing on trends and outliers in the number of products per year, per product category or per brand; b) the firms' webpages regarding healthy product innovation; and c) newspaper



articles about the firms from the LexisNexis database between 2010 and 2016. To select the persons to be interviewed, the contact person in the firm was asked to provide the names of the persons directly involved in making decisions within the innovation process, leading to one or more persons. In case of multiple persons, the researchers decided to interview the persons at the same time, creating small focus groups reflecting on the decision-making process within the firm. The interviews lasted between 50 and 70 minutes and were conducted in April and May 2017.

**Table 2.2.** Overview of cases in the study with the main firm characteristics

<i>Case</i>	<i>Supply chain position</i>	<i>Size category (revenue in the Netherlands)</i>	<i>Products with label (membership)</i>
<i>Case A</i>	Retailer	Large (>3 billion)	829 (2006–2016)
<i>Case B</i>	Retailer	Large (>3 billion)	634 (2006–2016)
<i>Case C</i>	Producer (own label)	Large (>150 million)	332 (2006–2016)
<i>Case D</i>	Producer (own label)	Large (>150 million)	74 (2007–2016)
<i>Case E</i>	Producer (own label & co-pack)	Medium (20–150 million)	42 (2007–2016)
<i>Case F</i>	Producer (own label)	Medium (20–150 million)	56 (2007–2016)
<i>Case G</i>	Producer (own label & co-pack)	Medium (20–150 million)	17 (2007–2016)
<i>Case H</i>	Producer (own label & co-pack)	Small (< 20 million)	100 (2007–2016)

After the interviews were conducted, they were transcribed *in verbatim* and the transcripts were coded in Atlas.ti using the three motive categories as main codes. For the sub-motives we used the codes mentioned in Table 2.1 and used open coding to identify additional sub-motives. Since motives identified in interviews do not necessarily represent organizational motives at the firm level, but could be a personal motive of the respondent, additional secondary data on the CSR policy and innovation was collected and coded using the code structure from the interviews and open coding for additional sub-motives to ensure the firm level of the identified motives. An overview of the data collected for each case can be found in Table S1 (Appendix A).

In the end, we analyzed the impact of the motives on the innovation process in two steps. First, we coded our data for quotes in which motives were described as complementary or conflicting during the innovation process. Second, we conducted a within-case analysis by summarizing the motives present in each case and comparing the occurrence of these motives to the firm's innovation behavior.

## 2.4 Results

In our empirical findings, we observed that multiple motives are present per firm, particularly instrumental and moral motives. For relational motives, the evidence was less convincing and partly overlapping with the instrumental and moral motives. In presenting our results, we will first discuss our findings on instrumental and moral motives, including the specific motives that were identified for both categories. Then we will present our results on the relational motives and their overlap with instrumental and moral motives. We finish the results section by shedding light on the role of the instrumental and moral motives in product innovation.

### 2.4.1 Findings on instrumental motives

The results of all instrumental motives indicated that the main objective of instrumental motives is the long-term survival of the firm. Innovation is indicated by all investigated firms as a way to ensure the firm's survival, or as nicely stated in case C:

“Innovation is one of the cornerstones of [Firm C]’s strategy of sustained growth and added value.” (*Case C*)

It is therefore not surprising that in the empirical data the instrumental motives were not only the most observed motives for healthy innovation, but they were also present in each source coded for each firm.

In comparing the instrumental motives, it was observed that the majority of the quotes could be fitted into three sub-motives, all linked to a particular objective that a firm needs to achieve in order to survive: 1) fulfilling consumer demand; 2) staying competitive in the market; 3) managing reputation and sustaining (or gaining) trust. Among the quotes that were identified as instrumental motives but did not fit these three sub-motives, it was observed that they addressed behaviors that support the general objective of survival of the firm: a) reducing risk; b) improving capabilities; and c) achieving firm growth. These behaviors can also support the three sub-motives, for example, the motive of a firm to reduce its products' saturated fat content could be to reduce the risk of reputation damage. An overview of the instrumental motives and their relation can be found in Figure 2.1.

That firms consider fulfilling consumer demand crucial for firm survival was pointed out in all cases. All the interviewees indicated at least once that the reason for creating healthier products is because their market research or other sources showed that the consumer is interested in buying these types of products and that not acting upon these

demands would mean missing a market opportunity. Related to this objective of fulfilling consumer demand is the firm's desire to stay competitive. If a firm does not act upon a consumer need, a competitor might do, leading to a loss of market share or missing new markets, thus threatening the firm's survival. To distinguish the 'consumer demand' motive from 'staying competitive' motive, we identified whether the respondent referred to desires of their consumers or to the actions of a competitors as the source of their motive. To stay competitive, innovation for healthy products was indicated in some cases as a way to differentiate from the competition and maintain market leadership, taking a more proactive stance in innovation. For firms without market leadership, competitiveness was about making sure their products could keep up with the average product composition in their category. This reactive stance can be marked as a 'not to be the best, but also not to be the worst' strategy.

The last main instrumental motive was identified through the observations that several cases indicate that their reputation or image is one of the most valuable assets of their business. In these cases, the main audience of concern for managing the firm's reputation is shown to be the consumer. However, the firms also experience that other societal actors, such as NGOs, also influence their consumers and their perceptions of health are thus also taken into account for reputation management. In asking the question why it is so important for a firm to comply with the consumers' health perception, the responses were mostly related to gaining or improving trust of the consumer in the firm's products. By showing the consumers that the firm responds to their health concerns, the firm tries to gain their trust and loyalty to its products. For this motive, again a distinction between reactive and proactive strategies were observed. Several cases indicated that healthy product innovation can strengthen the brand image. For these firms proactively acting upon the latest scientific evidence and dietary guidelines with their reformulation and product innovation helps them in preserving their healthy or responsible image. In the case of a reactive response, firms only reformulate their products if their reputation is threatened. Table 2.3 shows an overview of the three main instrumental motives.

#### 2.4.2 Findings on moral motives

In the observations on the moral motives, not only confirmations of the conditions of responsibility were observed, but in several cases a condition was perceived as applicable but at the same time as a restriction for the firm to act. In a few cases, conditions for responsibility were indicated as not applicable to the firm, indicating that the firm did not completely accept its moral responsibility for this particular issue. An overview of the moral motives per case is given in Table S2 (Appendix A).

**Table 2.3.** Overview of the instrumental motives with exemplary quotes

<b>Motive</b>	<b>Exemplary quotes of instrumental motives</b>
<i>Fulfilling consumer demand</i>	<p>“Satisfied customers and consumers are a prerequisite for the continuity of [Firm A] ...” (Case A)</p> <p>“But we also think that our target audience buys it, because it is healthy. So, we have to do it anyway, otherwise they don’t buy our products anymore.” (Case H)</p>
<i>Staying competitive</i>	<p><i>Staying ahead of competition:</i></p> <p>“There you can differentiate yourself. So, we would like to be ahead in everything, and nobody can deny that this [sugar-free] movement is there for a few years.” (Case F)</p> <p><i>Keeping up with the competition:</i></p> <p>“Like with the NVWA [Dutch food safety authority], they have their monitoring. And, yes, if they publish something, you will of course have a look and say ‘Oh, maybe we are a bit behind on this [sodium]’.” (Case B)</p>
<i>Managing a firm’s reputation and sustaining trust</i>	<p><i>Proactive reputation management:</i></p> <p>“It [ed. sugar reduction] is something we really want, what we want to show. We are in touch with the Ministry of Health, for whom we each year showcase: ‘Look, this is what we have again achieved’.”</p> <p><i>Reactive reputation management:</i></p> <p>“And if a consumer organization starts pointing like ‘You are bad’, so black-and-white... Yes, we don’t like that. So that’s when sometimes there is an impulse of ‘OK, then maybe we should take on this [product] category’ or ‘how come that our pizzas are that much saltier?’.” (Case B)</p> <p><i>Sustaining trust:</i></p> <p>“A brand is more than a logo or a clever strapline... it’s what people think of when they hear our name. It’s everything the public knows, trusts and loves about us. And for that very reason, brand reputation is hard won, but very easily lost.” (Case D)</p> <p>“[Firm A] values that customers can trust that the products of [Firm A] are achieved with respect for people, animals and the environment.” (Case A)</p>

All cases indicated moral motives for healthy product innovation, except for case E. We will present the results according to the five conditions of responsibility, as summarized in Table 2.4. For the first condition, moral agency, the majority of the investigated firms acknowledge their moral agency in the case of diet-related non-communicable health issues. They indicate that through product innovation and reformulation they intentionally act upon this issue. However, in case E the moral agency of the firm for this particular social issue is denied on several occasions, indicating that the sole responsibility of the firm is to comply with consumer demands and that the long-term health impact of their products is only relevant for product innovation if it is reflected in market research as a demand of their target audience. To illustrate:

*“... and the consumer just has a need. And we have a responsibility. So, we look at what is going on among consumers and that [ed. health] is therefore also a topic.” (Case E)*

In this particular case the other conditions of responsibility also weren't perceived applicable or were not specifically mentioned. For example, when specifically asked about the possibility of a causal role for the firm in case E, this role is rejected by indicating that the firm's product is an indulgence, that the consumer is aware of this and will only consume the product in moderation.

For the second condition, causality, the other firms in our sample acknowledge their role in the causal chain of events when it comes to the long-term health impact of their products. The extent to which they perceive their causal role does differ. Both case H and case F mention that their causal role is restricted by the freedom of choice of consumers and by difficulties in influencing consumer behavior. In contrast, the retailer in case A indicates that due to its position in the supply chain, it has multiple options to influence consumer behavior and thus it perceives a larger causal role.

For the third condition of responsibility, knowledge of the consequences, most firms indicate that it is their responsibility as producers to be experts on their products and thus to have knowledge about the long-term health consequences. If they did not have this knowledge in-house, they indicated that they made sure to gather it through stakeholder engagement. Only in one case the firm perceived a restriction in their capacity to absorb the required knowledge. Other firms indicate that access to the required knowledge is sometimes restricted by the unwillingness of stakeholders to engage in dialogue, as illustrated here:

*“[About dialogue with health agency] but is more like the door half closed, saying ‘It is on our website and good luck with it’. So, you [the firm] can really want it, and we do want it, only the question is about the other party, you know... You are still seen as a commercial party.” (Case D)*

In those cases, the firms indicate that they will seek for other stakeholders that are willing to provide them the required knowledge, such as industry partners or branch organizations. If the quality of the knowledge from these sources is questioned, the firms indicate that they at least have tried to gain as much knowledge as available to them and they thus can't be seen as negligent.

In the condition of ‘transgressing a norm’, all cases with moral motives indicate that they experience difficulties with assessing the norms. Although several authorities, like the Choices Foundation, have set criteria for healthy products, these criteria were always challenged by other societal actors. Two firms indicate that this diversity of health norms in society restricts them in making decisions in their innovation process. The other firms indicate that when the norms of several societal actors differ, they decide which societal actor to follow in their product innovation. For example, one firm indicated a front-of-pack food composition label made them realize that their product contained too much salt and made them reformulate, while in another case when an NGO complained about artificial sweeteners, the firm decided to not reformulate as they perceive the norm that artificial sweeteners are safe for their consumers’ health.

The last condition of responsibility is the ‘Freedom to act’ condition, which was seen by some firms as a motive for healthy innovation, while other firms felt restricted. Especially the retailers indicated that they have the power to make suppliers compete over developing the healthier product, which creates freedom to innovate for healthier products. Several of the producers, however, indicate that their freedom is limited because of this competition. For example, a firm can reduce the sugar content of their products, making their products healthier but tasting inferior to the competition. If the purchase behavior of the consumer is not influenced by health concerns, the firm will lose their consumer and thus market share. The ‘rules of the market’ are thus perceived by the firms as a constraint of their freedom to act, which shows a clear conflict between motives. We will elaborate on this connection between motives in the last section of this results chapter.

**Table 2.4.** Overview of the moral motives categorized per condition of responsibility.

<i>Conditions of responsibility</i>	<i>Exemplary quotes of moral motives</i>
<i>Moral agency</i>	“[Firm C] targets with its innovation the achievement of healthy, nourishing, responsible and tasty food...” (Case C)
<i>Causality</i>	<p>“Our goals are clear: we want to make sure that the consumer is not misled, that we don’t undermine healthy eating and living habits, that we don’t abuse the trust of children, that we protect children (inside and outside the school environment) and stimulate healthy eating habits.” (Case C)</p> <p>“That [CSR strategy] also includes the reduction of salt and fat: a desire of the whole society with regard to the battle against overweight.” (Case H)</p>
<i>Knowledge of the consequences</i>	<p>“See, we want to make the [product] category healthier, but we have to do that together with our suppliers. And they have a lot of substantive knowledge in-house, so from them [suppliers] you can also learn and eventually together create in a smart way a product category that is tastier and healthier.” (Case A)</p> <p>“But I think you always need external input of people who are really specialized in that discipline. So that is what we do by having such a conversation [with an academic scientist] and we go to a seminar or conference once in a while. That’s how you collect input on these matters”. (Case F)</p>
<i>Transgressing a norm</i>	“For a few years we have had a ready-to-eat meal which stated on the front ‘This meal contains 150% of your daily salt intake’. That is a great tasting meal and nobody who complaint. But now you would say ‘That is too much, you shouldn’t want that [in your product portfolio]’. (Case B)
<i>Freedom to act</i>	<p>“And fortunately, in our world there is always competition. So, if you [the supplier] don’t do it, your neighbor might. See, and then you [as retailer] always look for the best product, for the best price.” (Case B)</p> <p>“And we lose our customers, which is not nice because we want to make money with our products. But you also lose your health gain, if your people [consumers] get back to a product with a higher sugar content.” (Case C)</p>

### 2.4.3 Findings on relational motives

The main relational motive found in the empirical data was the desire to fulfil stakeholders’ expectations. All firms mentioned at least one stakeholder beyond their consumers, customers or suppliers, whose expectations are important for healthy innovation. In these relationships they indicate that some stakeholders are more important than others, as discussed previously. The influence of self-regulation was also mentioned, but in case of the Choices logo it was not perceived by the firms as pressure, but as a useful tool to define a healthy product composition. Other forms of self-regulation, such as an industry agreement to improve food product composition, were

also mentioned and they were more seen as a way to gain moral leadership. Moral leadership was also connected to stakeholder engagement, showcasing the healthy innovation outcomes to other stakeholders to confirm their leadership position.

In mentioning these relational motives, however, the firms also indicate why they think it is important to fulfil stakeholder expectations or gain moral leadership, which uncovers the motive behind their relational motive. These underlying motives are either instrumental or moral, as shown in Table 2.5. In case of fulfilling stakeholder expectations, it is described as supporting reputation management, providing a competitive advantage through endorsement or new knowledge, or as helping to understand consumer demands. In case of moral motives, the stakeholder is seen as a representative of society and their expectations represent societal norms. Living up to their expectations is therefore a way for a firm not to transgress societal norms. In case of self-regulation, firms indicate that a front-of-pack logo helps them to convince consumers that they comply with their demands and gives them a competitive advantage on the shelf, while morally self-regulation makes sure that the whole industry moves towards healthier products, eliminating restrictions on their freedom to move and creating a level playing field. In the end, moral leadership is indicated instrumentally as a way to get ahead of competition and gain market leadership, or morally as a way to show the rest of the industry what is ‘the right thing to do’ and strengthening societal norms. This overlap between the relational motives and the other two motive categories creates doubt on whether the relational motives are a category of motives that can be distinguished from the other two categories in case of product innovation. From our data, we would suggest that relational motives are present, but should be seen as precursors for the other two categories of motives, as depicted in Figure 2.1.

#### 2.4.4 Motives during product innovation

By innovating to make their food products comply with the Choices health criteria, food firms act upon the social issue of diet-related non-communicable health issues and thus aiming for responsible innovation outcomes. As mentioned above, both instrumental and moral motives are present in the investigated firms when it comes this type of responsible product innovation. The relational motives are present in our data, but because of their overlap with the other categories are not interpreted as a separate category, but as precursors for instrumental or moral motives. The relationships between the categories and their sub-motives are depicted in Figure 2.1.



**Table 2.5.** Overview of how relational motives serve instrumental or moral motives.

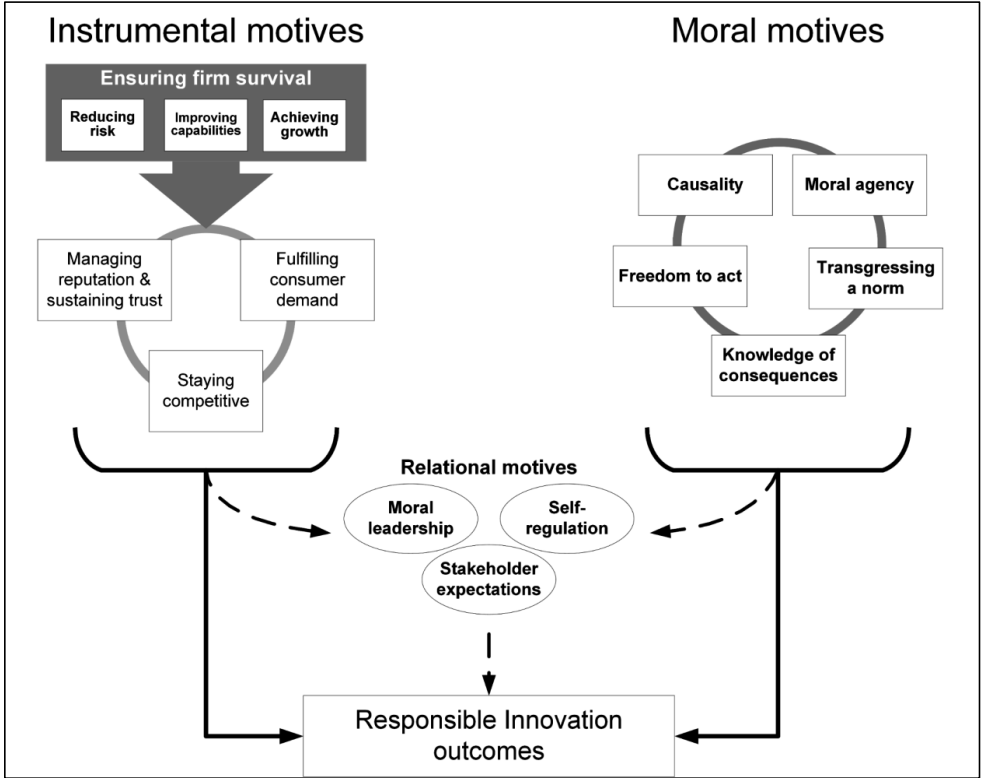
<b>Relational motive</b>	<b>Underlying motive</b>	<b>Exemplary quotes</b>
<i>Fulfilling stakeholder expectations</i>	Instrumental	“So, yes, it [response to negative feedback from an NGO] is more argued from an image point of view: ‘Should I respond immediately?’ [...] If it is big, we will act immediately. [...] (Interviewer: when is it big?) If on the front of the [name Dutch newspaper] it says ‘[Firm name] this and that’, then it is big.’ (Case B)
	Moral	“At that moment we got a lot of criticism down on our heads. Well, then you just have to take it [...] then you let go of the business model and ask yourself: ‘What do we actually want?’ Then we actually want to make steps towards a healthy breakfast.” (Case A)
<i>Responding to voluntary self-regulation</i>	Instrumental	“As a producer it [the Choices logo] is just a driver to differentiate yourself in the market by really showing that you are innovative [...] Look, behind the scenes, we are always working on this, but it is always nice if you can show it to the consumer.” (Case D)
	Moral	“Look, if you are talking about innovation, the set of criteria [of the Choices logo] is just really great to have. You can show to the supplier ‘This is what you need to comply with’. And not because [interviewee’s name] or [firm name] really wants it. No, we have agreed to it with each other. There are a lot of people that have contributed to this [set of criteria].” (Case B)
<i>Being recognized for moral leadership</i>	Instrumental	“[About health targets set by the industry] Yes, we are way ahead of target. [...] The nice thing is we see that because we really respond to this healthiness, that we are growing more at the moment than the category [market]. [...] And I think that the fact that we offer healthier products in the market contributes to this [growth] (Case D).
	Moral	“And we want to stay ahead, that is what we want anyway, so that [the market] you continuously keep an eye on. [...] So I really want that they [competitors] also reduce [sugar], because you want... [...] You don’t reduce sugar to make more money, because then you can better make other choices, right? You want to contribute as a firm to healthier food and that is only possible if the whole market does the same.” (Case C)

The question that remains is whether differences in motives of firms lead to different innovation decisions and thereby to different innovation outcomes. As all instrumental motives for healthy innovation have been observed in all firms, this study doesn’t allow us to observe if a difference in instrumental motives leads to different innovation behavior. However, all firms do explicitly mention instrumental motives for healthy innovation and several firms even indicate that instrumental objectives are necessary to reach the intended socially responsible outcomes, as illustrated in this quote:

“And we lose our customers, which is not nice because we want to make money with our products. But you also lose your health gain, if your people [consumers] get back to a product with a higher sugar content.” (Case C)

The quote illustrates that in a free market a firm’s product innovation can only have an impact on society if they are purchased by consumers. As product sales is an instrumental objective, it can be argued that the instrumental motive of a firm to increase its sales can contribute to healthy innovation. This leads to the following proposition:

**Proposition 1:** In a free market, responsible innovation requires to contribute to the firm’s instrumental objectives to be able to have a positive societal impact.



**Figure 2.1.** Overview of the motives for acting upon social responsibilities through innovation.

The observations on moral motives of a firm showed that there are five conditions for responsibility and that there is a difference between firms which of these conditions they feel compliant. In the overview in table S2 (Appendix A), on the one hand, no obvious patterns can be detected between the conditions a firm perceives to be compliant and the number of products the firm certified over the years. On the other hand, it can be

observed that although some firms perceive that several conditions of responsibility are not applicable to them, they still had products certified with the logo. From these observations we derive to the following proposition:

**Proposition 2:** A firm does not need to feel compliant with all conditions of responsibility in order to produce responsible innovation outcomes.

The main observation on relational motives from our results is that there is an overlap between the relational motives identified and the other two categories of motives. Although we agree that relationships with other societal actors play an important role in acting upon social responsibilities through innovation, we suggest that the development and maintenance of these relationships are driven by either instrumental or moral motives. This leads to the following proposition:

**Proposition 3:** Firms with a predisposition towards a social responsibility in product innovation will perceive stakeholder relationships as important because of instrumental or moral motives.

Another observation in the data is that the instrumental motives and moral motives can conflict with each other during the innovation process. In the innovation process, the motives of a firm are translated to criteria for the success of a new product. With healthy product innovation, instrumental motives are translated to, for example, sales targets and moral motives are translated into criteria for healthy product compositions. For some product innovations in our cases, the differing criteria could be aligned, creating healthy products that are benefitting both the firm's reputation and its profits. In other occasions, however, the product concept could not comply with both sets of criteria, which forces the firm to make trade-offs. These trade-offs lead to either products that are less healthy but do sell or healthy products with lower margins than initially projected. Both situations are occurring in our sample as indicated respectively by the following two quotes:

“Because sometimes we do have some outliers. Those products we think are very good. [Product name] is a good example. That one is certainly not healthy, but it is our best sold item.” (Case H)

“As category or portfolio manager you know: ‘Yes, I will make negative margin on that product, but then I’ll just have to compensate this with another similar product.’” (Case A)

These trade-offs are also reflected by the observation that some firms perceive competition as a restriction to their freedom to act and thus as a barrier to healthy innovation. The instrumental motive of staying competitive then conflicts with the moral motive of ‘doing the right thing’. These conflicts will only occur if the social issue at stake is not directly reflected by the purchase behavior of consumers, making the social issue not relevant for achieving the instrumental objectives. In those situations, a firm will only put its instrumental objectives aside and choose for the healthier option if moral motives are present. We, thus, suggest the following proposition:

***Proposition 4:*** If a social issue is not reflected by the purchase behavior of consumers, moral motives are required to make the firm responsive towards this social issue through product innovation.

The motive conflict between instrumental and moral motives was in some cases perceived as a conflict between departments and their differing targets, as several of our cases indicate. For example, the sales department could be more focused on fulfilling consumer demand, while the marketing or PR department has more concern for the reputation of the brand or the firm, and the CSR department wants to focus on providing healthier products to society. In other cases, with a multinational market, this motive conflict was observed between local and global management. In case F, an ongoing discussion on the causal role of the firm between local and global management was observed both in the interviews and in comparing local and global CSR reports. This situation was not specific to case F, as in the data of case C a similar tension was mentioned. However, in case C the management acknowledged its causality at a global level and was able to resolve the discrepancy by convincing local chapters of their causal role. To illustrate:

“Two years ago, in a meeting with a marketing director over there, she said: ‘Yes, but in Russia we will never work on sugar reduction, because it is not an issue here’. And now they are making steps in their recipes, they are reducing in steps. So that is a change.” (Case C)

To dissolve these incongruences, several firms introduced standards for the healthiness of products, based upon the criteria of the Choices logo. However, only when the standards were made mandatory or when some type of target or reward was attached to these health standards, were the motive conflicts fully resolved. For example, the marketing manager in case D explained that their management provided them with not just sales targets but also health targets per category, which made the categories strive for healthier

product composition through innovation and reformulation. In the firms where health standards were not enforced, the conflict was decided on a case-by-case basis and mainly driven by instrumental motives. Such a strategy led, however, in some cases to incongruence in health messaging, and thus to misunderstanding by the consumer and distrust by other societal actors.

**Proposition 5:** The moral motives for responsible innovation within a firm can only be acted upon if the firm acknowledges them consequently in innovation policies.

**Proposition 6:** If responsible innovation policies are mainly driven by instrumental motives, there is higher chance of incongruence in innovation outcomes and thus a higher chance of societal distrust in a firm's products.

## 2.5 Discussion and conclusion

The purpose of this study was to understand the role of organizational motives during product innovation in firms that aim for socially responsible outcomes. Earlier studies on motives for socially responsible business practices have focused on one dominant motive per firm and tried to explain their behavior accordingly (Bansal & Roth, 2000; Hamann et al., 2017). By investigating all motives present within a firm based on actual responsible innovation performance, we have been able to show the diversity of motives present in a firm. Thereby, our study contributes to the theory on motives for implementing RRI in industry by clarifying the interaction between the instrumental motives and the moral motives, and by questioning the nature of relational motives as an independent category. Regarding instrumental motives for innovation, RRI scholars have emphasized the negative effects of instrumental motives on the societal impact of innovation (Stirling, 2007; Sykes & Macnaghten, 2013). Our study results show that these instrumental motives for innovation may actually be required for enabling a firm to have a positive impact on society. For commercial product innovation, the rules of the free market allow a firm only to have a positive impact if the product reaches the consumer. Therefore, the instrumental motives of fulfilling consumer demand, staying competitive and managing reputation do not only serve the firm's self-interest, but also support the dissemination of their responsible products. Thus, to implement RRI in a commercial setting, RRI scholars should not only accept the existence of instrumental motives, but even see instrumental motives as a necessary condition for achieving responsible outcomes.

On the other hand, our study also confirms the idea of RRI scholars that the presence of instrumental motives alone can limit the positive societal impact of product

innovation. Our cases indicate that instrumental motives are perceived a driver but also a barrier for achieving socially responsible outcomes. In the case of consumer demand, for example, consumers do not always express a direct demand for healthier products. A firm might overcome this restriction by being flexible in its instrumental objectives: making an investment in a healthier product composition without expecting an increase in profit. However, a firm will only do this if there are moral motives present for product innovation and if these moral motives are translated to innovation objectives. In our study we have observed, on the one hand, that the criteria of a front-of-pack label could help in translating the moral motives to design requirements, acting as a tool for defining a healthy product composition. On the other hand, we have observed that only firms with clear moral motives will integrate these label criteria in their innovation policies. These innovation policies will then support the uptake of moral objectives during the product development process (Blok, Hoffmans, & Wubben, 2015; Blok et al., forthcoming). Firms with primarily instrumental motives will see the label criteria as a translation of the consumer demand for ‘health’ and will only use them if this consumer demand provides increased sales. Therefore, our results suggest that moral motives are required if a firm’s product innovation needs to contribute to a social issue that is not directly reflected by the purchase behavior of consumers and that they need to be translated to innovation objectives for consistent outcomes.

Furthermore, our study questions the distinction between relational motives and the other two motive categories in case of product innovation. All motives identified in our study could be traced back either to the motive of contributing to firm survival and thus instrumental, or to the motive of contributing to a better society and thus moral. The suggested third category of relational motives, as Aguilera et al. (2007) point out, focusses on complying with stakeholders’ expectations. Although we can understand that relational motives could be present at an individual employee level coming from the ‘need for belongingness’ (Aguilera et al., 2007), at an organizational level these motives are hard to distinguish from the instrumental and moral motives. When asking the question ‘Why does the firm want to comply with stakeholders’ expectations?’ it traces back to one of the two other categories, making the relational motive secondary to a primary instrumental or moral motive. In case of an instrumental primary motive, stakeholders’ expectations can threaten the firm’s reputation, focusing on pragmatic legitimacy (Suchman, 1995). In case of a moral primary motive, the stakeholders’ expectations are seen as representations of societal norms and complying with these norms is ‘the right thing to do’, focusing on moral legitimacy (Suchman, 1995). The translation of these societal norms to product requirements, such as the Choices logo

criteria, can be seen as establishing consensus what is ‘the right thing to do’, referred to by Suchman as establishing cognitive legitimacy (Suchman, 1995). However, as our arguments are only based on eight cases, we would encourage further research in this direction. For these studies, we recommend that the firm activity which is assessed on motives is clearly specified, multiple motives per firm can be detected, and the design allows for detecting possible underlying motives.

This study has also some limitations. Our study design allowed for identifying and comprehending theoretical concepts, but not for the validation of relationship between the concepts. Therefore, to substantiate the relationships between a firm’s motives and innovation performance, and possible moderators such as a front-of-pack label, needs further research, with preferably a larger sample size. Another limitation of our study is the decision to study the motives of responsible innovation in such a specific context as the food industry. Although the food industry with its large size and direct impact on daily life is very relevant for investigating the impact of innovation on society, its short product development cycle and low-tech products are not representative for other sectors. Our findings should therefore be replicated in other sectors.

To conclude, our study provides a new perspective for the implementation of RRI to commercial innovation. If we would like commercial innovation to contribute to solutions for societal issues (Von Schomberg, 2013) or to moral progress (Van den Hoven, 2013), we need to understand which moral motives are present in the innovative firms and how these moral motives can be integrated in the success factors of their product innovation without annihilating the instrumental benefits. As we discovered in our study, the answer to this dilemma can only be found by connecting the scientific disciplines of CSR and RRI and drawing upon each other’s expertise on societal responsiveness and innovation.





## Chapter 3.

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### TOWARD A VALUE-SENSITIVE ABSORPTIVE CAPACITY FRAMEWORK: NAVIGATING INTER-VALUE AND INTRA- VALUE CONFLICTS TO ANSWER THE SOCIETAL CALL FOR HEALTH.

#### Abstract

The majority of studies on Absorptive Capacity (AC) underscore the importance of absorbing technological knowledge from other firms in order to create economic value. However, to preserve moral legitimacy and create social value, firms must also discern and adapt to (shifts in) societal values. A comparative case study of eight firms in the food industry reveals how organizations prioritize and operationalize the societal value health in product innovation while navigating inter- and intra-value conflicts. The value-sensitive framework induced in this article extends AC by explaining how technically-savvy, economic value creating firms diverge in their receptivity, articulation and reflexivity of societal values.

*This chapter is published as:*

Garst, J., Blok, V., Branzei, O., Jansen, L., & Omta, O. S. W. F. (2019). Toward a Value-Sensitive Absorptive Capacity Framework: Navigating Inter-value and Intra-value Conflicts to Answer the Societal Call for Health. *Business & Society*, 000765031987610.

### 3.1 Introduction

Food manufacturers have been increasingly pressured to contribute to solutions of the many grand challenges impacted by their industry, such as climate change and the epidemic of diet-related non-communicable diseases (NCD; e.g. type 2 diabetes, cardiovascular diseases, cancer). The latter challenge is specifically pressing food manufacturers to redesign their products and disseminate health-conscious alternatives (Scott et al., 2017). As with all grand challenges, innovation is seen as one of the main strategies for tackling this grand challenge (Ferraro et al., 2015). Due to their dual role as both the innovator and the diffuser of the innovation, corporate actors are seen as the main catalyzer of innovation (Pinkse & Kolk, 2010; Scott et al., 2017). Theories of innovation, however, have mainly emphasized capabilities for technological progress (W. M. Cohen & Levinthal, 1990) and left open the question of whether and which societal values innovators should internalize (Hahn, 2015; Hart, 1995). There are two notable exceptions. Responsible Research and Innovation (RRI) scholars advocate for societally desirable and ethically acceptable innovation outcomes and processes (Stilgoe et al., 2013; Von Schomberg, 2013). Corporate Social Responsibility (CSR) scholars echo this call by indicating that firms need to maintain their moral legitimacy and “meet the conditions of moral agency” by behaving “in a manner consistent with society’s values” (Suchman, 1995; Wartick & Cochran, 1985, p. 759). As the design of an innovation is never value-free, the task of the innovator is thus not merely to advance technical knowledge but also to align such development with societal values and thus take robust action towards grand challenges (Ferraro et al., 2015; Van den Hoven, 2013). Although scholars acknowledge that traditional decision-making models do not suffice (Ferraro et al., 2015; Wright & Nyberg, 2017), the question how firms absorb societal values and translate them into socially desirable products and services has not been answered by either RRI or CSR scholars.

To identify and transcend the social limitations of traditional innovation management theory, we focus on Absorptive Capacity (AC), defined as “a set of organizational routines and processes by which firms acquire, assimilate, transform, and exploit [external] knowledge to produce a dynamic organizational capability” (Zahra & George, 2002, p. 186). The AC concept offers a necessary starting point for theorizing organizational-level differences in corporate social performance (Pinkse, Kuss, & Hoffmann, 2010; Riikinen, Kauppi, & Salmi, 2017). However, recent studies have begun to challenge its sufficiency, pointing to critical differences between technical and societal ways of knowing (Dignum et al., 2015; Hahn et al., 2016). Although the number of articles on

AC has – since its conception in the late 1980s – grown exponentially, these studies have mainly focused on the absorption of technological knowledge from other firms and research institutes. When the objective is to design socially responsible products and services in response to grand challenges, firms have to absorb a different kind of knowledge – societal values – from a much broader variety of stakeholders. We contribute by asking how firms absorb knowledge about societal values.

In order to answer this question, this article starts with by reviewing the key limitations of the AC framework regarding the absorption of societal values. We then recap the main RRI and CSR attempts to investigate the incorporation of societal values in designing socially responsible innovations. The literature review ends with definitions and descriptions of value conflicts, showing how social value creation can be hindered by both intra-value and inter-value conflicts (Blok & Lemmens, 2015; Manders-Huits, 2011). We then elaborate a Value-sensitive Absorptive Capacity (VAC) framework, by inductively examining the responses of Dutch food firms to the NCD crisis. By analyzing the absorption of the societal value health in the innovation practices of eight firms, three value-sensitive knowledge-absorption capabilities were identified. We demonstrate how these VAC capabilities play an important role in how firms recognize competing values and process value conflicts. Our discussion compares this inductively derived VAC framework against the limitations of both RRI and CSR to underscore the role that the value-sensitivity of knowledge-related capabilities can play in making commercial innovation contribute to grand challenges.

## 3.2 Literature review

### 3.2.1 Absorptive Capacity: how firms absorb knowledge

In establishing the concept of AC, Cohen and Levinthal (1990, p. 570) emphasize its important role in innovation by indicating that AC does not just facilitate the firm in becoming “more efficient at doing what it is already doing”, but that with its AC “a firm may acquire outside knowledge that will permit it to do something quite different”. This capacity to acquire knowledge from the external environment and assimilate, transform and ultimately exploit this knowledge has therefore been described by Zahra and George (2002) as one of the main Dynamic Capabilities (DC). DC are higher-level capabilities that enable a firm to reconfigure lower-level or operational capabilities, thus evolve its organization in response to its changing environment and sustain its competitive advantage (Teece, Pisano, & Shuen, 1997; Watson, Wilson, Smart, & Macdonald, 2017; Zahra & George, 2002). The AC framework of Zahra and George (2002, pp. 189–190)

consists of four dimensions: 1) Acquisition as “a firm's capability to identify and acquire externally generated knowledge that is critical to its operations”; 2) Assimilation as “the firm's routines and processes that allow it to analyze, process, interpret, and understand the information obtained from external sources”; 3) Transformation as “a firm's capability to develop and refine the routines that facilitate combining existing knowledge and the newly acquired and assimilated knowledge”; 4) Exploitation as a capability “based on the routines that allow firms to refine, extend, and leverage existing competencies or to create new ones by incorporating acquired and transformed knowledge into its operations”.

Since the creation of social value is dependent on the ability of the firm to respond to its environment, scholars have indicated that the AC framework provides a suitable foundation for exploring the capabilities required for social value creation (e.g. Pinkse et al., 2010; Riiikinen et al., 2017). However, the conceptualization and positioning of AC limits its use for investigating the creation of social value (for full overview of the AC literature reviewed, please see Appendix B). In their initial introduction of the concept, Cohen and Levinthal (1990, p. 148) indicate that AC could provide a competitive advantage by allowing firms “to exploit rapidly useful scientific and technological knowledge through their own innovations or to be able to respond quickly – become a fast second – when competitors come up with a major advance”. The great emphasis that Cohen and Levinthal put on highly technological knowledge is also reflected by the empirical studies on AC, as evidenced by the use of patent counts as an indicator for AC or its outcomes (Nooteboom, Van Haverbeke, Duysters, Gilsing, & van den Oord, 2007; Patel, Kohtamäki, Parida, & Wincent, 2015; Tortoriello, 2015). However, when aiming to create social value, a firm requires knowledge on what is desired by society, which is not the main subject of technological knowledge. Furthermore, probably due to their focus on technological knowledge, the stakeholders indicated as valuable sources of knowledge by AC scholars have been other firms and universities or other research institutes. Although these organizations have knowledge on possible solutions available, a broader selection of stakeholders is needed to indicate whether these solutions address social issues in a societally desirable way.

Although in recent years several studies have used AC to explain the socially responsible behavior of firms (Busch, 2011; Pinkse et al., 2010; Riiikinen et al., 2017), these studies only to a limited extent challenge traditional conceptualization of AC. Investigation of the absorption of other types of knowledge will not only deepen the AC concept (Volberda et al., 2010), it might also provide input for re-conceptualization AC towards

social value creation. In the next section, we indicate how in the fields of RRI and CSR scholars have shown that societal values are at the foundation of social value creation but at the same time create tensions that are not taken into account in the traditional AC framework.

### 3.2.2 Societal values: ensuring societal desirability

To be able to address grand challenges, a firm should make sure that its innovations comply to the dynamic and complex definitions of societal desirability and acceptability, which are defined by the values and norms that exist in society (Suchman, 1995; Von Schomberg, 2013). Scholars who investigate the relationship between business and society use the construct *social value* or *social values* in a multitude of applications (Gehman et al., 2013; Rohan, 2000). In this article, we distinguish between these applications by referring to 1) *social value* when indicating the output of business practices that has a beneficial impact on society as a whole and can be directly or indirectly measured (Gehman et al., 2013), and 2) *societal values* when indicating the input of business practices, as defined by Schwartz and Bilsky (1987, p. 551): “(a) concepts or beliefs, (b) about desirable end states or behaviors, (c) that transcend specific situations, (d) guide selection or evaluation of behavior and events, and (e) are ordered by relative importance”.

Although social value as an output of corporate social behavior has received a lot of attention in the business management field – evidenced by numerous articles on Corporate Social Performance (Wood, 2010) – societal values as representation of stakeholder demands have received only limited attention. Twenty years ago, Swanson (1999, p. 511) already acknowledged the importance of these values for CSR and related fields by indicating that “[v]alues operate dynamically across individual, organizational, and societal levels of analysis to influence decision making”. Although several scholars have taken up this message, the majority of studies regarding the dynamics of values in business practices have investigated organizations from a cultural perspective (Athanasopoulou & Selsky, 2015), looking at amongst others individual sense making processes of managers (Hahn, Preuss, Pinkse, & Figge, 2014) and the influence of the CEO (Plambeck & Weber, 2009) or organizational identity on these processes (Gehman et al., 2013). These studies investigate internal values-work discussing the institutionalization of a societal value within an organization, while for investigating socially responsible behavior the interaction between the firm and external stakeholders is crucial (Hawn & Ioannou, 2016; Watson et al., 2017). In this article, we therefore

connect internal values–work with external stakeholder engagement to achieve a more comprehensive framework of capabilities for socially responsible behavior.

A combination of multiple theoretical lenses is required to understand the complexity of socially responsible behavior (Athanasopoulou & Selsky, 2015; Wood, 2010). One of these other lenses is provided by RRI scholars, who investigate how societal values can be incorporated in the innovation process and its outcomes in order to respond to the grand challenges of our global society (Stilgoe et al., 2013; Von Schomberg, 2013). Within this field a prevalent concept is Value Sensitive Design (VSD), a three-step framework to integrate values in design build on insights from engineering ethics (B. Friedman, Kahn, & Borning, 2002). As a first step, the general values that are relevant for the design need to be discovered, also referred to as conceptual investigation (Cummings, 2006; B. Friedman et al., 2002). To discover values relevant for their context, RRI scholars emphasize the need for inclusive deliberation through stakeholder engagement and public debate, and philosophical reflection (Doorn, 2012a; Nissenbaum, 2005; Owen et al., 2013, p. 38). Second, societal values are specified to become more concrete (Nissenbaum, 2005). Each norm is specified to (a set of) design requirements through technical investigation, narrowing the norm in scope of applicability, in the aims strived for and in the actions required (B. Friedman et al., 2002; Van de Poel, 2013). Which design requirements are seen as appropriate for a value is context-dependent and thus inclusive deliberation is also recommended in this second step of specification (B. Friedman et al., 2002; Manders-Huits, 2011). The third and final step of VSD is verification, in which the resulting design is assessed on “whether values have been successfully embodied in design” (Nissenbaum, 2005, p. lxix).

Although this VSD framework provides a clear step-by-step approach to value translation, in several cases scholars have identified tensions between stakeholders when practically implementing the framework (Dignum et al., 2015; Manders-Huits, 2011). In the next section, a deeper analysis of these tensions shows how ideal of VSD is not easily translated to commercial settings.

### 3.2.3 Value conflicts: why societal values are difficult to absorb

The existence of tensions when firms try to create social value is well-established by sustainability scholars. Building on the theories of socio-technical transitions, these scholars have identified tensions on three dimensions: space, scale and time (Coenen, Benneworth, & Truffer, 2012; Raven, Schot, & Berkhout, 2012; Slawinski & Bansal, 2015). These tensions are often observed at the macro level, but at the meso level they are also present in the shape of regulative, normative and cognitive rules. In this

categorization, values are described as normative rules, which “are internalized through socialization processes” (Geels, 2004, p. 904). Each type of stakeholder has its own rules regime and, therefore, interaction between different types of stakeholders leads them to challenging each other’s rules. These tensions are, however, required in order to change rules regimes and create innovation, especially in the case of transitions towards sustainability (Geels, 2011).

In studying the incorporation of societal values into new technologies, VSD scholars observe these tensions between stakeholders’ normative rules and categorized them in two types of value conflicts. The first conflict arises due to “different understanding of how a particular value could best be served”, referred to as *intra-value conflict* (Dignum et al., 2015, p. 1181). In multi-stakeholder engagement, the different stakeholders are often observed to agree on the importance of societal values – such as *health*, *safety* and *environmental friendliness* – but tensions arise when discussing how these values should be translated to concrete requirements for the technology and the innovation process (Dignum et al., 2015; Haen, Sneijder, Te Molder, & Swierstra, 2015).

The VSD and other RRI literature does not provide clear guidance on how to solve *intra-value conflicts* (Haen et al., 2015; Manders-Huits, 2011). Some scholars argue that deliberating the operationalization of values in detail through inclusive stakeholder dialogue would eventually lead to consensus (Dignum et al., 2015; Flanagan, Howe, & Nissenbaum, 2008; Nissenbaum, 2005). Other RRI and CSR scholars point out that this open and inclusive deliberation is not achievable for commercial innovation due to multiple barriers: 1) the efficiency drive of firms creates a lack of time for deliberation (Brand & Blok, 2019); 2) the information asymmetry, required for competitive advantages through innovation, hinders the sharing of knowledge (Blok & Lemmens, 2015); 3) non-commercial stakeholders are unwilling to deliberate with firms because of power imbalances (Blok, 2014; Haen et al., 2015; Manders-Huits, 2011) and distrust towards the firms’ commitment (Burchell & Cook, 2013; den Hond & de Bakker, 2007). In absorbing societal values, firms should thus respond to these *intra-value conflicts*, knowing that the preferred response of inclusive deliberation requires them to overcome these three barriers.

The other type of conflict occurs when two or more societal values are incompatible in one solution (Dignum et al., 2015; Manders-Huits, 2011). In design thinking, incompatibilities between values are often seen when the values are translated to design requirements and then trying to combine these requirements in one design (Flanagan et al., 2008). However, these *inter-value conflicts* can also appear before operationalization

of values. For example, firms can have pre-conceptions about which values are incompatible – such as *enjoyment* and *health* – which could lead to normative myopia (Swanson, 1999). Bundy et al. (2013) describe similar conflicts in their framework on issue salience and conflict between a stakeholder issue and the organizational identity. Using their terminology, normative myopia would occur when a firm sticks to its organizational identity no matter how many times stakeholder issues challenge this identity and cause identity conflicts. The problem with the issue salience framework is, however, the use of the term *issue*. By using this term to frame stakeholder demands, Bundy and colleagues overlook that when issues impact the firm, these issues are often caused by the same firm having neglected – knowingly or unknowingly – a particular societal value. Using the term *societal value* thus enables a deeper analysis of the cause of stakeholder demands and allows a forward-looking perspective to responsiveness, without having to wait for issues to occur.

To resolve these inter-value conflicts, VSD scholars identify three types of responses: 1) continuing to explore the conditions that make them incompatible and redesign the product so that the incompatibility is dissolved; 2) trade off one value against another 3) seek a compromise between conflicting values (Flanagan et al., 2008). Referring to the first response, Flanagan et al (2008) indicate that incompatibilities should be seen as opportunities for continued innovation. Although morally preferred, this response might be problematic in highly competitive markets, as indicated by CSR scholars, especially since it requires the often narrow-minded business decision making to be broadened to embrace a climate of reflexivity and the complexity of social value creation (Hahn et al., 2016). Therefore, in the case of CSR or sustainability, firms are observed to use the second type of response to inter-value conflicts: trading off societal values that create social value for values that lead to direct economic value (Hahn, Figge, Pinkse, & Preuss, 2010; Slawinski & Bansal, 2015). Even though investing in social value may bring moral legitimacy in the long-term (Suchman, 1995), trading off direct economic value for social value and uncertain long-term economic value brings a risk that firms in highly competitive markets are not willing to take. In order to not completely trade off social value creation, firms often choose to act upon low hanging fruits in which they only minimally adjust the conventional business practices to create direct economic value and a limited level of social value (Crane, Palazzo, Spence, & Matten, 2014; Hahn, Kolk, & Winn, 2010). These actions mark the third response to inter-value conflicts: compromising between values. This response is problematic, because it is very difficult to balance conflicting values in a socially desirable way (Manders-Huits, 2011). In investigating hybrid organizations, that “pursue a social mission while engaging in



commercial activities that sustain their operations” (Battilana & Lee, 2014, p. 399), business scholars have observed, besides that a compromise is not always possible, it often does not allow firms to gain full support of important stakeholders over the long-term and it may lead to internal dissent (Pache & Santos, 2013).

In summary, the intra-value and inter-value conflicts that have been identified by RRI scholars can also be found in the CSR and general management literature. Although some connections have been made with organizational capabilities (Hahn et al., 2016; Watson et al., 2017), further insights are needed on which capabilities firms require to be able to respond to these conflicts in a societally desirable manner. As the traditional AC concept is too limitedly focused on technological knowledge received from firms and research institutes, a re-conceptualization of AC might shed new light on how knowledge absorption capabilities can support a firm in creating social value. Therefore, the case study presented in this article investigates the absorption of the societal value of *health* by eight food manufacturing firms and building on its insights initiate the AC re-conceptualization into the concept of Value-sensitive Absorptive Capacity (VAC).

### 3.3 Materials and Methods

Using a comparative case study design, we aim to answer the following question: how do firms absorb knowledge about societal values to create social value? We start with foundational concepts from AC, RRI and CSR literature, and inductively explore how firms manage inter- and intra-value conflicts (Pratt, 2009).

#### 3.3.1 Context and Case Selection

To make sure any variety in our cases is related to between-firm differences, the scope of the case study focuses on one industry, in one country and one particular grand challenge: the response of the food industry in the Netherlands on the increase in diet-related NCDs. The NCD crisis is one of the main health-related grand challenges targeted by the Sustainable Development Goals (Swinburn et al., 2013; World Health Organization, 2017). The difficulty of responding to this grand challenge by food firms lies in its complexity, uncertainty and evaluative nature (Ferraro et al., 2015), which can be exemplified by the database of the NOURISHING framework containing food-related policy effectiveness studies for the NCD crisis (World Cancer Research Fund International, 2013). First, the NOURISHING framework illustrates that the complexity of the NCD crisis lies not just in the intricate physiological relationship between food and health, but also in the interlinkages between, for example, psychological mechanisms of eating behavior, socio-economic determinants of purchase

behavior and the economic dependencies in the agri-food sector. Furthermore, the framework's call for more multi-disciplinary studies shows not only the large level of uncertainty in all of the previously mentioned areas, but also the evaluative nature of the NCD crisis, highlighting the multitude of ways to characterize and investigate it.

One of the solutions for this grand challenge foresees a clear role for food firms: the reformulation of food products (Garst, Blok, Jansen, & Omta, 2017; Magnusson & Patterson, 2014; Stuckler & Nestle, 2012). The food industry in the Netherlands is a particularly interesting context for collecting data with a high variety, as the country hosts both a large number of food SMEs as well as several large MNEs (e.g. Unilever, Ahold Delhaize). To ensure that the cases have acted upon healthy product innovation, we selected members of the Dutch Choices Foundation (i.e. Stichting Ik Kies Bewust), which since 2006 has coordinated a voluntary front-of-pack health logo. To be allowed to place the logo on their products, firms have to be a member of the foundation and their products need to comply with a nutrient profile, specified for 22 product categories (bread, processed fruits, etc.) (Stichting Ik Kies Bewust, 2015). These criteria were developed in 2006 with regard to the prevention of diet related NCDs and were revised by an independent scientific committee in 2007, 2010 and 2015 to stimulate product innovation for healthier products (e.g. reductions in energy, salt and saturated fat levels per product) (Roodenburg et al., 2011). Information of all products certified between 2006 and 2016 was collected in a database.

The Choices database was used to purposefully sample firms that complied with two criteria: 1) were members of the Choices Foundation at the time of the interview to allow for a real-time study of innovation processes; 2) had at least one brand marketed directly to the Dutch end-consumer to experience direct contact with health-conscious consumers. As our cases are selected from the membership list of a front of pack health logo, all firms had direct experience with responding to the societal value of *health* through product innovation. Out of the sixteen firms that were contacted, eight firms were willing to participate in the study: two retailers that developed products for their private label and six food manufacturers. Several manufacturers also developed products for other firms (i.e. co-pack). Reasons for non-response were low interest in participating in scientific studies or no time for participation. Table 3.1 provides an overview of the selected cases.

### 3.3.2 Data Collection and Analysis

To triangulate the data and thus strengthen the validity of the research, the data collected in this study were from two kinds of sources (Yin, 2011): 1) interviews with thirteen

managers who were in charge of coordinating the product development projects in the firm; 2) 57 corporate reports that were publicly available on the website (see Table 3.1 for overview per case). For several firms, multiple persons were interviewed as in those firms the coordination responsibilities of product development shifted between departments, depending on the origin of the innovation project (i.e. new market insight versus new processing technology). In these cases, all persons were interviewed at the same time to investigate both individual and shared mental models, because together they “provide insights into what new knowledge is recognized, how it is transformed and combined, and how it is applied” (Lane et al., 2006, p. 857). The interviews lasted 50-70 minutes and were conducted from April-May 2017.

The interview guide contained questions related to how the firm defined *health* within their organization and how they operationalized this societal value for their product development. The structure of the interview was based upon the AC dimensions defined by Zahra and George (2002): Knowledge Acquisition; Knowledge Assimilation; Knowledge Transformation; Knowledge Exploitation. In addition, questions were added on learning capabilities, which is missing from the Zahra and George framework according to Todorova and Durisin (2007). To incorporate value-based thinking, for each dimension questions were asked about if stakeholders’ views were incorporated and about any internal or external factors that hindered or facilitated acting upon the dimension. In order to decrease socially desirable answers and thus to increase the validity of the data, the interview guide was supplemented with probes to explore possible discrepant evidence of the firms’ behavior (Yin, 2011). These probes consisted of specific examples and trends of the firm’s product innovation behavior derived from the Choices database and other publicly available information, on which the interviewees were asked to comment.

**Table 3.1.** Overview of Cases in the Study with the Main Firm Characteristics and the Data Collected per Firm

<b>Case</b>	<b>Supply chain position</b>	<b>Size category (revenue in the Netherlands)</b>	<b>Products with label (membership)</b>	<b>Interviewees</b>	<b>Secondary Sources</b>
<i>Super1</i>	Retailer	Large (>3 billion)	829 (2006-2016)	Quality manager Policy officer	7 (1 Corporate report; 6 CSR reports)
<i>Super2</i>	Retailer	Large (>3 billion)	634 (2006-2016)	Quality manager	11 (2 Codes of conduct; 1 Corporate report; 8 CSR reports)
<i>DairyCorp</i>	Dairy producer (own label)	Large (>150 million)	332 (2006-2016)	R&D manager Nutrition manager	11 (3 Corporate reports; 3 CSR reports; 5 webpages)
<i>SodaCorp</i>	Soft drink producer (own label)	Large (>150 million)	74 (2007-2016)	Marketing manager	9 (2 Codes of conduct; 7 webpages)
<i>SpreadInc</i>	Sandwich spreads producer (own label and co-pack)	Medium (20-150 million)	42 (2007-2016)	Marketing manager	1 (1 webpage)
<i>CandyCorp</i>	Candy producer (own label)	Medium (20-150 million)	56 (2007-2016)	Two marketing managers	9 (2 Codes of conduct; 2 CSR reports; 5 webpages)
<i>DrinkSupply</i>	Soft drink producer (own label and co-pack)	Medium (20-150 million)	17 (2007-2016)	Marketing director Marketing manager R&D manager	5 (3 Corporate reports; 2 webpages)
<i>NoMeatInc</i>	Meat substitute producer (own label and co-pack)	Small (< 20 million)	100 (2007-2016)	Marketing/sales manager	4 (2 CSR reports; 2 webpages)

In preparation of the analysis, the interviews were transcribed in verbatim and all sources were uploaded in Atlas.ti (Scientific Software Development, Berlin, Germany). Although our interview guide was based on the AC framework, it quickly became apparent that firms needed other capabilities to absorb value-laden knowledge. Instead to bring out the value absorption process, first, we used a coding scheme based on the value hierarchy of Van de Poel (2013): the label *values* indicated excerpts that discuss health at an abstract level, the label *norm* indicated excerpts about specific aspects of health (e.g. lower energy intake), and the label *design requirement* emphasized the application of a health aspect to a specific product (e.g. reduce the number of the calories with 10%). Second, once all excerpts associated with these labels had been extracted from each case, we looked for instances of conflict between or within values. Excerpts were divided into *inter-value conflict* and *intra-value conflict*. Third, we re-analyzed each case looking for the responses to inter- and intra-value conflicts and compared emerging patterns across cases. After identifying the main activity patterns, descriptions of each pattern in each case were developed, taking into account changes over time in case reports of multiple years were taken into account. In the end, the descriptions per activity pattern were used for a between-case comparisons, which was used for our final characterization of the firms. An example of the coding can be found in Appendix B. The following section provides a summary of the between-case comparison per activity pattern.

### 3.4 Findings

Although each of the firms acknowledged the existence of inter- and intra-value conflicts when handling the value *health*, their responses to these conflicts differed. By analyzing these responses, three activity patterns were identified that were robustly utilized by all eight firms, which we named: 1) Value Receptivity; 2) Value Articulation; 3) Value Reflexivity. To describe how each of the three activity patterns are represented in the case study, the next sections will compare per pattern three sets of cases: a) the two supermarkets (*Super1* and *Super2*); b) the two large firms (*DairyCorp* and *SodaCorp*); c) the four smaller firms (*SpreadInc*, *CandyCorp*, *DrinkSupply* and *NoMeatInc*). These results of these comparisons are summarized with illustrative excerpts per case in tables 3.2, 3.3 and 3.4 (*Super1*, *Super2* and *DairyCorp* in Table 3.2; *SodaCorp*, *SpreadInc* and *CandyCorp* in Table 3.3; *DrinkSupply* and *NoMeatInc* in Table 3.4).

### 3.4.1 Value Receptivity

The first activity pattern was identified by observing that firms highlighted different sources of knowledge and included different aspects in their understanding of the value *health*. We name this concept Value Receptivity to underscore that firms are not passive recipients of knowledge about values, but that their level of broad-mindedness and observance allows them to actively search for and integrate new value aspects in their own understanding of a value. Understanding of the value *health* was gained by *Super1* through regular contact with both commercial and non-commercial stakeholders. Over time, the reports of *Super1* show an increase of the number of health aspects integrated and a broadening of understanding the relationships between aspects and their connection with the value *health*. All analyzed sources of *Super2*, on the other hand, show that its understanding of health is mainly gained from commercial stakeholders. Its contact with non-commercial actors is ad hoc and not routinized. Evidenced by its reports, this firm focused on four health aspects and that number of aspects has stayed constant over time. The selection of these aspects was attributed to industry agreements and no further explanation was given on their relation to health.

The differences between the large firms – *DairyCorp* and *SodaCorp* – on Value Receptivity are more subtle. As *DairyCorp*'s portfolio covers multiple product categories and *SodaCorp* covers only one category, *DairyCorp* acted upon a larger variety of health aspects than *SodaCorp*. However, within their one category *SodaCorp* still included a large variety of aspects in their understanding of health, confirmed in both interviews and reports. Concerning the sources used to derive these health aspects, both firms use their consumer research capabilities and industry networks extensively, but for non-commercial stakeholders they agree that direct engagement is difficult. Barriers they indicate are e.g. the stakeholders' fear of harming their legitimacy as independent voices and doubts on the collaboration benefits for these stakeholders. However, *DairyCorp* is observed to actively look for other non-commercial resources (e.g. UN/WHO reports, scientific publications, dietary guidelines) to overcome these barriers, while *SodaCorp* resorts to its internal knowledge, as indicated by the interviewee: "*Look, we really have enough expertise here within our technical team to find out to which [health] conditions [a product] needs to comply*" [interviewee *SodaCorp*].

Although all firms use knowledge from consumer research and business customers for understanding *health*, the four smaller firms indicate them as their main sources. *CandyCorp* and *NoMeatInc* showed awareness of industry agreements and regulatory developments, while *SpreadInc* and *DrinkSupply* were not familiar with these initiatives

and actually called for a need for a common definition at industry-level. Proactively searching non-commercial stakeholder engagement is not done routinely by the firms, besides ad hoc interactions with nutritional professionals by *SpreadInc* and *CandyCorp*. Although *DrinkSupply* acknowledged their lack of engagement with non-commercial stakeholders, the other three firms indicated that their in-house experts are knowledgeable enough to understand *health* – like previously discussed *SodaCorp*. At the same time, all four firms showed difficulties in understanding the health aspects they encounter and their relation to *health*. In the interviews, the representatives of *DrinkSupply* and *NoMeatInc* often could not explain how aspects contributed to health or doubted if they were not related to other values, such as environmental protection. In *CandyCorp* and *SpreadInc*, one interviewee showed understanding of the connection between health aspects and nutritional science behind them, but the other data sources of their firm did not confirm this understanding. While for some firms the reports made no distinction between aspects of different values, in reports of other firms, aspects switched over years from *health* to other values without further explanation. The reports of *SpreadInc* did not mention any particular health aspects.

### 3.4.2 Value Articulation

The second activity pattern accentuates the internal communication of the firm about this value, as observations showed how the multiple parts of the firm's organization talked about operationalizing and prioritizing *health*, sometimes in a starkly different way. We refer to this activity pattern as Value Articulation to emphasize the effort of a firm to make explicit within its organization the extent to and the way in which a value factors into its practices. In *Super1* the articulation of *health* was quite consistent, explained by the firm's control over all business practices. Thus, the firm did not only integrate health aspects in its product development strategy but also in product marketing, in-store communication and store lay-out. To ensure progress on this integration, the firm had yearly CSR objectives and rules for product development, which were monitored by a designated board member and the firm's sustainability team. Communication activities are regularly organized to diffuse the health strategy among its employees and its suppliers. These activities are successful as they perceive much less resistance in implementing the health criteria than in the beginning, according to the interviewees: “*What I notice regarding coordination is that last year I really had to push and pull. Every time [I had to say] ‘No, it needs to comply with the guidelines’. What I notice now is that [they respond with]: ‘What are the criteria? Then we will get going with it’*” [Interviewee *Super1*]. To prevent exceptions to its health strategy in product development, *Super1* tries to be flexible on other product requirements, such as taste

and price. Although this flexibility has led to failures in the past, the firm accepts these risks as part of their drive for responsible innovation. The focus of *Super2* on a limited number of health aspects should make Value Articulation easier, but instead its action upon health is more inconsistent than *Super1*. This can be mainly attributed to *Super2*'s structure as a federation of multiple supermarkets, which have chosen to only collaborate on product development. As other business practices are handled independently, the inconsistent articulation is observed as dissimilarities between reports of several members in the health aspects named. The interviewee acknowledges this inconsistency and thus consistency is maintained within product development through rules, such as “new products cannot be the unhealthiest in the category”, and “all products that comply with the certification criteria need to be certified”. However, exceptions to the rules did exist, due to either rigid supplier contracts or the need for a majority approval of all members to initiate collective action or oversight within the R&D department.

In Value Articulation, both *DairyCorp* and *SodaCorp* have tied the value *health* to their overall business strategy and the interviewees also attribute the success of the firm to their health-related activities. However, as *DairyCorp* acts upon a larger variety of health aspects than *SodaCorp*, consistent articulation is more complex for them. Therefore, *DairyCorp* has developed a detailed set of health criteria for each product category, based upon the criteria from the Dutch Choices Foundation and (inter)national dietary guidelines. To stimulate the uptake of the criteria within its organization, *DairyCorp* chose to implement stepwise making them more binding each year. At the time of the interview the health criteria were mandatory for product development and the interviewees indicated that exceptions required high-level approval, valid for only one or two years. As in *Super1*, their sustainability team was responsible for diffusing and monitoring the health criteria, but the operational departments had the final responsibility for implementation. *SodaCorp*, on the other hand, articulated their health aspects through portfolio-level objectives with a clear deadline. Strategies for reaching target did not only concern product composition changes, but also included marketing strategies to prioritize products that included health aspects. To ensure full commitment, all brands were investigated for possibilities to reduce calories. However, the reformulation efforts differed per brand and the marketing rules were not applied to all brands. These exceptions were made based on consumer perception of the brand, whereby the interviewee indicated that some brands are stronger connected with *enjoyment* than with *health*.



Although similar exceptions were made by the four small firms, their overall articulation was less consistent than the other firms. Two small firms tried to harmonize their understanding of health within their firm through internal guidelines: *NoMeatInc*'s products were compared to the nutritional compositions of the average referent product and *CandyCorp* had targets for health aspects in 2015 and 2016. However, the criteria of *NoMeatInc* did not concern all health aspects they act upon and were easily traded off for other aspects, while the targets of *CandyCorp* were not implemented globally and were discontinued after not achieving them in 2016. *SpreadInc* and *DrinkSupply* have no clear criteria or targets and their articulation differed per product. In all four, trade-offs and compromises on health aspects were common. As long as their consumer research showed that most consumers of a particular product did not care for a particular health aspect, the firms did not act upon this aspect for this product. When a health aspect was indicated as relevant by consumers and an industry agreement existed for this aspect, *NoMeatInc* and *DrinkSupply* introduced a step-by-step reformulation strategy. In *SpreadInc* and *CandyCorp* no such strategies existed. In all four firms, when there was a large enough consumer interest in a health aspect but there was no industry pressure, a new product – which included the aspect – was developed and marketed next to their existing products. To reach their consumers, the health aspects needed to be communicated on the packaging, which made them susceptible to the EU regulations on health claims for food products, e.g. for a reduced sugar-claim the product should contain 30% less sugar than a referent product. This communication requirement thus made the firms hesitant to invest in reformulation. In addition, although the firms set lower sales targets for the health-included products, these products still needed to compete with the existing products on shelf-space and their continuance thus depended on the retailers' interest in the particular health aspect. Therefore, in these firms the *health* definitions of the retailers were also articulated, leading to more inconsistency. As indicated by *NoMeatInc*: “*You cannot say we will make an exception because it sells very well. But maybe you can put [the noncompliant product] under another brand, that is completely fine. [...] Because that [health aspect] is for our [main] brand. Look, if a large retailer tells us ‘I only want [noncompliant] products’, then they are of course welcomed [as customer]’* [interviewee *NoMeatInc*].

### 3.4.3 Value Reflexivity

Third and last, the firms differed in how they assessed their impact on *health* and responded to divergent views on their impact. We use the label Value Reflexivity to refer to the differential investment firms made to monitor their practices, and the resulting degrees of awareness, about their role and responsibility in grappling a societal

value. For *Super1*, its health objectives and the resources of their sustainability team allowed monitoring of the impact of their practices. As its product portfolio was very large, the interviewees acknowledged that the firm could not monitor the whole portfolio continuously. Therefore, each year they selected several categories to monitor. Furthermore, their regular meetings with external stakeholders give *Super1* the platform to ask feedback on their health strategy and activities. Due to the limitations of *Super2*'s monitoring system, the federation was not able to have a complete and accurate overview of their product compositions. Internal reflection was thus limited, and it depended on external monitoring systems, such as certifications. As it had no desire to become the healthiest in the categories, *Super2* did not proactively ask for feedback from stakeholders. For both firms, the responsiveness was limited by their supplier contracts and their conditions. If there was external pressure to change the product composition, the firms were forced to break open the contract, which causes friction in their supplier relationship. *Super1*, however, indicated that this did not happen often as their contracts already incorporated health criteria, while for *Super2* this was not the case.

Both *DairyCorp* and *SodaCorp* were continuously monitoring the progress using their health criteria and targets. The results of the monitoring were shared within the firm, which, according to the interviewees, motivated both employees and management to evaluate if their actions were enough. For example, when in *SodaCorp* the original target was expected to be achieved before the deadline, the management decided to raise the target to make it more ambitious. *DairyCorp*'s monitoring exposed technical barriers across categories. Subsequently, the firm instated multi-national, cross-departmental expert teams and started long-term research projects with scientific institutes and business partners to overcome these barriers. Such long-term activities were a bridge too far for *SodaCorp*, as the interviewee indicates that the continuous drive to be the first to market led to a focus on quick solutions instead of long-term strategies and external collaborations. As mentioned, both firms experienced barriers in non-commercial stakeholder engagement. For example, the interviewee of *SodaCorp* indicates: “*For our [new product] launched this year, [we have] in a very early stage asked for advice from the Centre of Nutrition [...]. But then the door is half-closed [and their response is] ‘You can read it on our website, good luck’. So, you can really want [feedback] and we do, [...] but we are still seen as a commercial party. And this type of organizations, in my experience, wants to maintain their objectivity*” [interviewee *SodaCorp*]. This lack of dialogue made the interviewees hesitant to respond to criticisms directly – arguing that the stakeholders’ views were inconsistent over time, uninformed of the constraints of commercial innovation, or ignorant of differences between scientifically backed-up

claims and unconfirmed consumer concerns – the criticism still led to internal reflection and often action. For example, both firms felt forced to act upon non-scientific aspects, but in those cases *DairyCorp* made sure not to relate non-scientific aspects to health or other health aspects, while in *SodaCorp*'s reports the distinction between scientific and non-scientific aspects was more ambiguous.

For all small firms no evidence was found on continuous monitoring routines related to health aspects. *CandyCorp* did track its progress on some health aspects in 2015 and 2016, but the targets for 2016 were set lower or less ambitious than 2015 and in 2017 the firm decided to stop all monitoring of these targets. For this firm, the interviewees and reports show some reflectivity on their responses, indicating that their abilities to take up health aspects is limited by their business model – such as limited ability to ask a premium price or take less margin – but that these barriers should not be used as excuses to not act, as the interviewee indicated: *“I think that if we continue to use price as an excuse, then nothing will happen. So, we do not do that, [...] we take little steps [...] we would not let it slow us down, but we have to be realistic about what we put in front of the consumer”* [interviewee *CandyCorp*]. As a response, they continue to investigate whether healthier alternatives can be created for their top five brands. Also, the interviewees in *DrinkSupply* seem to realize that they need to think more long-term when it comes to health and need to take risks now to be able to survive in a future market. This realization is, however, not combined with a clear strategy on how to achieve this long-term health vision. In *SpreadInc* and *NoMeatInc* no health-related strategies projecting more than a year were observed.

Regarding responses to divergent views, the firms indicate that due to their small size they are not often directly targeted by critical stakeholders. When discussing critical views, all four firms use defensive arguments, referring to unresponsiveness of business partners, the inherent inter-value conflict between enjoyment and health, the lack of interest for health by their target consumer and the lack of accountability from other food categories for public health issues. Only when purchase behavior of their consumers or customers might be affected by the criticism, they will respond. *CandyCorp* and *DrinkSupply* have proactively tried to gain feedback from non-commercial stakeholders but got limited to no response. In *SpreadInc* and *DrinkSupply*, positive feedback of nutrition professionals on their health-included products did initiate dialogue but did not lead to any strategic changes in the firm.

Table 3.2. Overview of Case Study Results for Firms *Super1*, *Super2* and *DairyCorp*

	<i>Super1 – Supermarket</i>	<i>Super2 – Supermarket</i>	<i>DairyCorp – Dairy</i>
<i>Value Receptivity</i>			
<i>Broad</i>	“Healthy nutrition and enough exercise play an important role in the battle against overweight and lifestyle diseases. [...] [Super1] can make a difference here, as a supermarket chain.” <sup>1</sup>	“...we have to cater with our products the demand of our customers. Still we at [Super2] also direct the supply if we pick up signals from society and think that we in particular need to take our responsibility.” <sup>1</sup>	“Innovation within [DairyCorp] is driven by insights in consumer needs and business customers, societal developments in the area of nutrition and sustainability, and the knowledge of experts within [DairyCorp]” <sup>2</sup>
<i>Narrow</i>			
<i>Value Articulation</i>			
<i>Consistent</i>	“What I notice, regarding coordination, is that last year I really had to push and pull, like ‘No, it has to comply with the guidelines.’ And now I notice that it is just like: [Name], what are the criteria? Then we’ll get cracking with it.” <sup>3</sup>		“In 2016 the [DairyCorp] Nutrition Policy has been developed, which describes criteria for better products, responsible marketing communication and education about a healthy dietary pattern and exercise.” <sup>2</sup>
<i>Inconsistent</i>		“And [one supermarket] thought, [...] it’s good to do this [caloric labeling for soft drinks]’. But then we said ‘Well, if you target soft drinks, why do you not target crisps as well? [...]’ So how this came to be, no idea.” <sup>3</sup>	
<i>Rejecting exceptions</i>	“And we can sometimes agree with each other, like ‘Then we do not take our [profit] margins. Let the product first proof itself and then later we can look what else is possible’.” <sup>3</sup>		“Therefore, you really need a good reason to deviate and it also needs to be approved at a higher level. [...] And sometimes they will give it a ‘GO’, but then saying, ‘Within one or two years we want the product to comply.’” <sup>3</sup>
<i>Accepting exceptions</i>		“[Super2] is much more about families, especially the families with a social status that’s lower than average, right? Those might have less desire for whole-wheat pasta.” <sup>3</sup>	

Table 3.2 (Continued). Overview of Case Study Results for Firms Super1, Super2 and DairyCorp

Value Reflexivity		Super1 – Supermarket	Super2 – Supermarket	DairyCorp – Dairy
Responsive		“Well at that moment we got a lot of criticism [...]. Then we tried to let go of the business model and said: ‘What would we want?’ We actually wanted to make a step towards a healthier meal. [...] So you try to do it in steps, which is of course not appreciated, because then it always contains products that an NGO can shoot down. But in the end, we made it. Last year we complied with the [national dietary guidelines].” <sup>3</sup>	“It’s reasoned from [a] reputation [point of view]. [NGO] can call out something, but they do that quite a lot. If I think it is nonsense, then we do not do anything. And if I say ‘Well, they do have a point’ then we act upon it. And if it is big, we act upon it immediately.” <sup>3</sup>	“We would like to move. Tell us where we need to move towards, tell us what we need to comply to. Then we all [= all firms] need to comply with that.” <sup>3</sup> “... our senior management was not really aware of the nutritional aspects of our products and where we were. And this [monitoring] process has made that much more visible.” <sup>3</sup> “Can we also go to 4 [grams of sugar] or can we go to 3?” <sup>3</sup>
	Defensive		“What we think is annoying is how difficult these [different standards] are to combine. I mean, guys, let’s try to speak with one voice! But there are so many [different] interests, different categories, different... It is very complicated.” <sup>3</sup>	

Source: <sup>1</sup> CSR report; <sup>2</sup> Annual report; <sup>3</sup> Interview

**Table 3.3.** Overview of Case Study Results for Firms *SodaCorp*, *SpreadInc* and *CandyCorp*

	<i>SodaCorp – Soft drinks</i>	<i>SpreadInc – Sandwich spreads</i>	<i>CandyCorp – Candy</i>
<i>Value Receptivity</i>			
<i>Broad</i>	“...how is health defined? We at marketing define it by looking around ourselves [and] to consult other organizations [names branch organizations and multi-stakeholder platforms].” <sup>3</sup>		
<i>Narrow</i>		“Look, because if we are going to tell that we are becoming very healthy, then that goes a bit against our positioning. [...] Because we are really in an indulgence-category. [...] The consumer also does not really ask for it...” <sup>3</sup>	“Well, health... I have a bit of trouble with the term ‘health’, as you might have noticed. Retailers use or used ‘responsible’. And we have bent that towards ‘conscious’.” <sup>3</sup>
<i>Value Articulation</i>			
<i>Consistent</i>	“Yes, those are concrete, quantitative targets. On the one side it is about the caloric count. [...] But also about the revenues [we have targets].” <sup>3</sup>		
<i>Inconsistent</i>		“For our foodservice branch [the health logo] actually just stayed important. [...] But in retail our interest of making tasty [products] became more important and less about making it comply with [health logo].” <sup>3</sup>	“[So] we [as a company] say ‘There is nothing wrong with sugar, blah blah blah’. But in any case, there is this image about sugar. So, we have said in the briefing for [brand name] that for sugar there is something on consumer level, so [...] how nice would it be if we can make the same tasty product with less sugar?” <sup>3</sup>
<i>Rejecting exceptions</i>			
<i>Accepting exceptions</i>	“[Brand A] has consciously made the decision to only communicate [to consumers] about light-products. [...] And for [Brand B] it is still about flavors, so this [brand] will not communicate separately on light or non-light.” <sup>3</sup>	“If it does not need to be added, we would not add it. But in the end the product needs to be the tastiest. So ‘tasty’ comes first.” <sup>3</sup>	“So, we did have a recipe [...] with about ‘30 less, 25 less’, in sugar and kilocalories, but this is not tasty. So, then we added fruit juice [is not sugar under EU law]. Well, that has an effect on your kilocalories. So now we are at 30% less sugar, 11% less kilocalories.” <sup>3</sup>

**Table 3.3 (Continued).** Overview of Case Study Results for Firms *SodaCorp*, *SpreadInc* and *CandyCorp*

	<i>SodaCorp – Soft drinks</i>	<i>SpreadInc – Sandwich spreads</i>	<i>CandyCorp – Candy</i>
<i>Value Reflexivity</i>			
<i>Responsive</i>	“I think we often want to go to quick, whereby we just do not have time left to really think about it. [...] But I think we should just work more on the complete picture.” <sup>3</sup>		
<i>Defensive</i>		“We also go to conferences for dieticians [...]. We made a leaflet [with a] comparison with a [referent product]. So, in this way we can make the consumer more conscience that [our product] is actually quite OK...” <sup>3</sup>	“[At the branch organization] they discussed if we need to remove the [cartoon] characters of our packaging or not. [...] If I was convinced that taking a strawberry of my packaging would solve the obesity problem, then I would have removed it yesterday. It just does not make any sense.” <sup>3</sup>

Source:<sup>1</sup> CSR report; <sup>2</sup> Annual report; <sup>3</sup> Interview

**Table 3.4.** Overview of Case Study Results for Firms *DrinkSupply* and *NoMeatInc*.

	<i>DrinkSupply</i> – <i>Soft drinks</i>	<i>NoMeatInc</i> – <i>Meat substitutes</i>
<b>Value Receptivity</b>		
<i>Broad</i>		
<i>Narrow</i>	“Only the feedback we got from the customer was ‘OK, but is this healthy?’ Well, who decides that? How am I to compare it with a referent product? Or with a medical or dietary advice? I mean, that’s a dilemma.” <sup>3</sup>	“It’s about the perception of the consumer. And if the consumer thinks it is bad, you need to act, even if it is not substantiated.” <sup>3</sup>
<b>Value Articulation</b>		
<i>Consistent</i>		
<i>Inconsistent</i>	“Everybody has a different opinion of what is healthy. [...]. So, our strategy is above all to provide choices and our goal is to have something for everybody.” <sup>3</sup>	“[Consumer trends] go from E-number free to vegan the next year. When we make vegan products, we always need to use one E-number for consistency. And then all of a sudden E-number free is no longer important...” <sup>3</sup>
<i>Rejecting exceptions</i>		
<i>Accepting exceptions</i>	“And then we let them taste multiple varieties, like ‘This is what it tastes like with so many grams of sugar, this with so much, this without sugar.’ Like that we try to find a compromise and we actually try to help the retailer or our customer in finding that balance.” <sup>3</sup>	“Because sometimes we have some outliers. These products we really think are great. Our [product name] is a good example. That one is certainly not healthy, but it is our best-selling product.” <sup>3</sup>
<b>Value Reflexivity</b>		
<i>Responsive</i>		
<i>Defensive</i>	“But if you invite a dietician, they will have one opinion. And if you invite five others, then you probably going to get five other opinions.” <sup>3</sup>	“Now in the time of social media, everybody can give their opinion. So, you should not be guided by it, because there is also a large group that does not provide an opinion but just buys [our product].” <sup>3</sup>

Source: <sup>1</sup> CSR report; <sup>2</sup> Annual report; <sup>3</sup> Interview



#### 3.4.4 Responding to Value Conflicts

As indicated previously, what makes the absorption of value-laden knowledge difficult is firms having to respond to two types of value conflicts: 1) inter-value conflicts that arise when (the operationalization of) two values are seen as incompatible in one design; 2) intra-value conflicts that arise when the views of societal actors on how a value should be operationalized differ. Concerning the societal value *health*, two inter-value conflicts were most commonly mentioned: a) its conflict with the short-term consumer interest of *tastiness*; b) its conflict with the short-term interest of the firm *profitability*. For intra-value conflicts, the firms most commonly mentioned the conflict on whether high intensity sweeteners and other food additives are harmful or have no impact on health. In responding to these and other value conflicts, the three previously identified activity patterns are observed to again cause repeated patterns. In order to demonstrate these patterns, we will describe how three illustrative firms respond to value conflicts: *CandyCorp* illustrating small firms, *DairyCorp* illustrating large firms, and *Super2* illustrating supermarkets.

In the case of *CandyCorp*, its narrow understanding of *health* was justified by the firm through inter-value conflict: as their product is for indulgence and *health* is perceived by its consumers as incompatible with the value *enjoyment*, the firm does not need to understand the value *health*. This narrative was articulated consistently throughout the firm, decreasing the awareness of intra-value conflicts and accepting exceptions on health aspects in the case of inter-value conflicts. However, at the same time, *CandyCorp* observed that this incompatibility of *health* and *enjoyment* increasingly is challenged by society and is influencing consumer purchase of its products. Therefore, *health* aspects were picked up by its product development teams, leading to inconsistency in Value Articulation of *CandyCorp*. Due to its defensive Value Reflexivity, *CandyCorp*, on the one hand, resisted these divergent insights by continuing to communicate that any response to this incompatibility is unnecessary. On the other hand, *CandyCorp* did respond when they perceive that the purchase behavior of its consumers is influenced by health aspects. This responsiveness was evidenced by the growing sugar-free segment in its portfolio. Although this could be perceived as evidence against the existence of an inherent inter-value conflict, *CandyCorp* indicated these products as exceptions and did not see them as a reason to develop a firm-wide strategy for responding to the value *health*.

With their broad understanding of *health*, *DairyCorp* quickly identified intra-value conflicts. When these conflicts lead to the identification of a new health aspect,

*DairyCorp's* in-house nutrition experts compared this aspect to existing health aspects in the firm, thereby broadening its understanding. However, the decision to articulate this new health aspect throughout its organization was indicated as challenging for *DairyCorp*, as due to its rejection of exceptions, articulation would directly need to lead to adjusting its standards. Therefore, *DairyCorp* only chose articulation if the new health aspect were supported by scientific evidence or national policies. If this were not the case, *DairyCorp* defended the existing health aspects and resisted the new health aspect in its external communication. However, for some brands the firm still adjusted its products to the new health aspect in order to be able to respond to consumer demand. However, these aspects were then articulated as consumer demands that are unrelated to *health* to prevent inconsistency. For inter-value conflicts, *DairyCorp's* rejection of exceptions left its product development team with only one strategy for dealing with inter-value conflicts: continue exploration of the aspects in conflict and redesign the product to solve their incompatibility. As exceptions on health aspects need high-level approval, *DairyCorp's* senior management team was able to monitor which value conflicts were most common and responded with strategic practices to solve these incompatibilities. Such responses included setting up expert panels or starting research projects. For example, when health aspects were continuously seen to conflict with requirements for tastiness, *DairyCorp* initiated a multi-stakeholder research project to redesign the taste tests, which lead to more flexible requirements for the value *enjoyment*.

As the firm was more limited in its nutritional expertise and non-commercial stakeholder engagement, *Super2* relied more on the insights gained from its commercial stakeholders to understand intra-value conflict and to decide how to act upon it. This reliance in some cases caused a delay in response compared to *DairyCorp*. However, its acceptance of exceptions allowed the firm to articulate a new health aspect in one part of its portfolio and not others. Thereby, *Super2* could make up its delayed understanding with a quick but inconsistent response, at the risk of being challenged by stakeholders on its inconsistency. For inter-value conflicts, its Value Articulation made *Super2* act similarly to *CandyCorp*: accepting exceptions on health aspects unless consumer demand provides an incentive to overcome the conflict. Due to its lack of monitoring, *Super2* had difficulty reflecting upon repeated inter-value conflicts and thus in responding strategically to overcome these conflicts. Only within the boundaries of its departments, some repeated inter-value conflicts were perceived, leading to adjusted practices within teams.

Outlining the predominant approach of each firm for each capability results in particular VAC profiles, as shown in Figure 3.1. The four smaller firms (*SpreadInc*, *CandyCorp*, *DrinkSupply*, and *NoMeatInc*) are observed to have the similar VAC profile and also have similar responses to value conflicts. The two large firms and one supermarket show how the opposite approaches for the three behavior patterns could support the firms to respond to value conflicts. In Value Receptivity, *SodaCorp*'s lack of engagement with non-commercial stakeholders was compensated as their active involvement in industry-level initiatives included engagement with some non-commercial stakeholders, making their receptivity broader than the smaller firms. Likewise, the accepting of exceptions in *Super1* and *SodaCorp* was compensated with their consistent articulation of *health*, which allowed their employees to classify any compromises or trade-offs as exceptions to the rule. On the contrary, the inconsistent articulation of the other supermarket, *Super2*, seemed to make it difficult for employees and suppliers to distinguish exceptions from the rule and likely led to more trade-offs or compromises in the case of inter-value conflicts. Also, for Value Reflexivity, *Super2* was restricted in its responsiveness by its limited resources for monitoring and the constrained mandate received from its members. Therefore, on the one hand, *Super2* can be categorized as less value-sensitive than the other large firms. On the other hand, due to its active involvement in industry-level initiatives – like *SodaCorp* – its Value Receptivity is broader than the smaller firms, leading to a bit higher value-sensitivity for the value *health*.

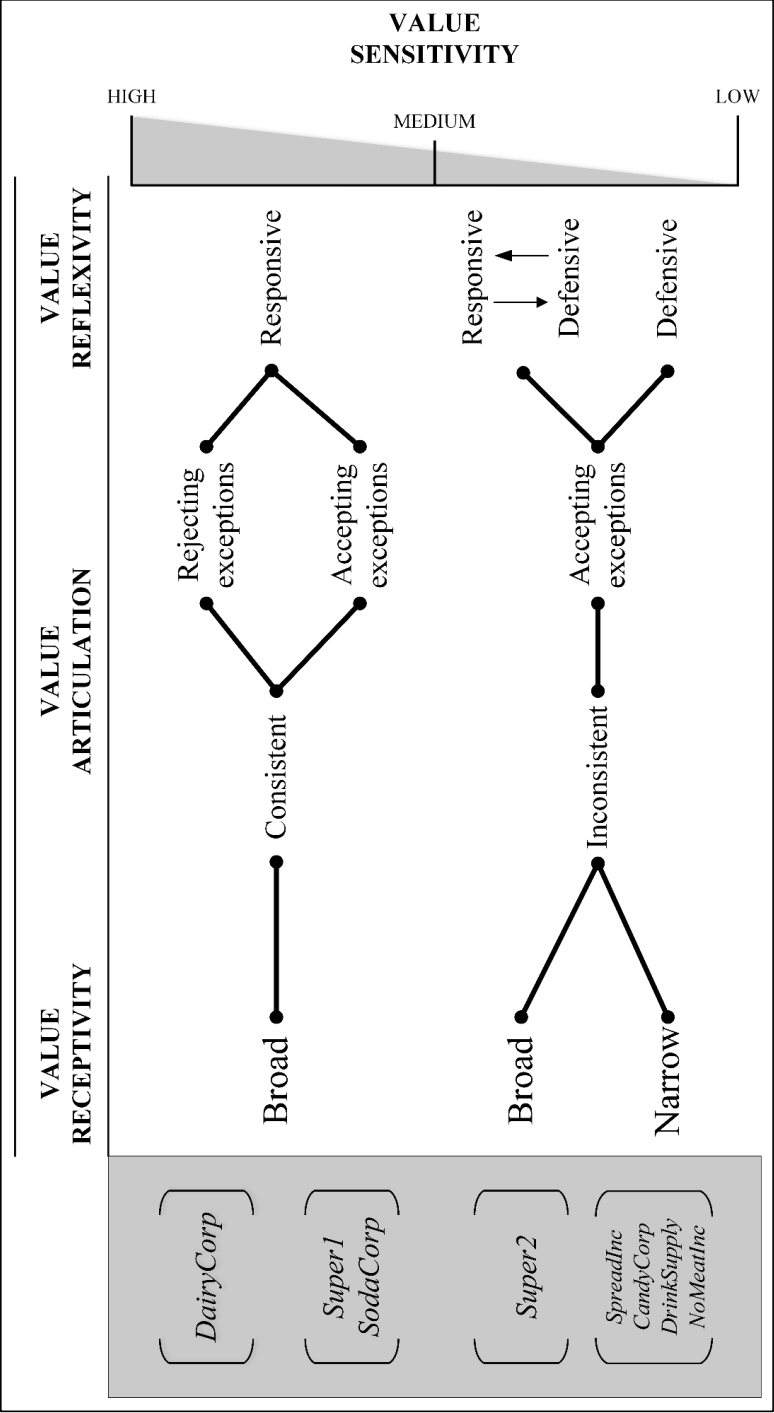


Figure 3.1. Depiction of the Value-sensitive Absorptive Capacity of the eight Investigated Firms.

## 3.5 Conclusions and Discussion

### 3.5.1 Conceptual Framework of Value-sensitive Absorptive Capacity

In order to respond to the grand challenges in society, firms require to produce innovations that comply to the dynamic and complex definition of what is societally desirable and ethically acceptable and thus continuously absorb knowledge on societal values from a wide set of stakeholders (Ferraro et al., 2015; Suchman, 1995; Von Schomberg, 2013; Wartick & Cochran, 1985). Although knowledge absorption theories could provide valuable insights into the capabilities required for value absorption, its main literature stream on AC has narrowly focused on absorption of technological knowledge from other firms and research institutes. In order to answer the following research question – *How do firms absorb knowledge about societal values to create social value?* – a re-conceptualization of the AC framework is in order. Our study shows that absorbing societal values supports a firm in navigating value conflicts between stakeholders. In this absorption of societal values, we observed three patterns: 1) Value Receptivity; 2) Value Articulation; and 3) Value Reflexivity. As these three patterns complement each other but do not reflect linear processes, we denote them as the three dimensions of VAC framework. Additionally, for each dimension the data showed differences between the firms in their approaches. For Value Receptivity the firms ranged between a broad and a narrow approach to understanding the value. For Value Articulation the firms communicated either consistently or inconsistently and rejected or accepted exceptions. For Value Reflexivity the firms ranged between a responsive and a defensive approach. The definitions of the three VAC dimensions and their approaches – as derived from our data – are shown in Table 3.5.

Furthermore, the results of our data analysis show that differences in VAC approaches between firms also reflect differences in their response to intra- and inter-value conflicts. By describing these conflicts and their responses, we aim to provide sustainability scholars a frame for analyzing system-level tensions related to sustainability at the organizational level. As indicated by Geels (2004), conflicting normative rules are indicators of tensions in the socio-technical transitions towards sustainable systems, which are observable at organizational level. By distinguishing between intra- and inter-value conflicts in our analysis, our case study shows which capabilities are required to respond to each type of conflict. Therefore, our article shows that making this distinction between value conflicts is essential when comparing firms in their responses to the tensions in the sustainability transition.

**Table 3.5.** Definitions of the three VAC Capabilities and their Underlying Dimensions.

<b>Concept</b>	<b>Definition</b>
<b>Value Receptivity</b>	The firm's ability to understand a societal value.
<i>Broad</i> <sup>1</sup>	The understanding of the value is based on multiple sources and connects multiple aspects.
<i>Narrow</i>	The understanding of the value is based upon a restricted number of sources and includes a limited number of aspects which are disconnected.
<b>Value Articulation</b>	The firm's ability to communicate a societal value within its organization.
<i>Consistent</i>	All parts of the organization understand and integrate the value in the same way.
<i>Inconsistent</i>	The value is understood and integrated in the organization in different ways.
<i>Rejecting exceptions</i>	Practices that deviate from the value are discouraged.
<i>Accepting exceptions</i>	Practices that deviate from the value are accepted.
<b>Value Reflexivity</b>	The firm's ability to evaluate its role in acting upon a societal value and respond to divergent insights by adjusting its practices.
<i>Responsive</i>	The firm monitors its role in acting upon a societal value and is open to adjusting its practices divergent insights.
<i>Defensive</i>	The firm does not or limitedly monitor(s) its role in acting upon a societal value and divergent insights are to be resisted or persuaded.

<sup>1</sup> This concept should not be confused with the concept of *search breadth*, as defined by Laursen and Salter (2006), as their operationalization refers only to the number of stakeholders a firm communicates with and not the breadth of the knowledge absorbed from these stakeholders.

### 3.5.2 Contributions to the Literature and Suggestions for Future Research

By presenting this VAC framework with its three dimensions, this article aims to progress the scientific discourse in both the RRI (e.g. VSD) field and the CSR field. However, as this study is only a first step in developing a new theory on the absorption of societal values by firms, further research is required to validate our VAC framework. Besides testing and challenging the three dimensions, future studies on VAC could focus on several questions that are unanswered in our article. First, the connection between the dimensions and how that relates to firm processes needs to be further explored. As we have learned from the AC literature, knowledge absorption is not linear but a reiterative processes with multiple feedback loops (Lewin, Massini, & Peeters, 2011; Todorova & Durisin, 2007). Although our study captured data sources over multiple years, the data were not rich enough to establish whether and how the VAC dimensions could strengthen each other and lead to socially responsible innovation outcomes. For example, our study results suggest that a more responsive attitude towards stakeholders in Value Reflexivity could lead to more knowledge about the value and its aspects and thus broaden a firm's Value Receptivity. However, the size and specificity of our sample does

not allow us to provide an exhaustive list of mechanisms and factors that determine when such new knowledge about a value leads to integration of new value aspects in a firm's understanding of the value and eventually an adjustment of the value definition it articulates in its organization. Previously CSR and RRI scholars have identified several of these mechanisms and factors, for example a) for Value Receptivity, mechanisms such as: environmental scanning and cue sensing (Ortiz-de-Mandojana & Bansal, 2016; Wood, 2010); philosophical deliberations on societal values (Nissenbaum, 2005); prevention of means-end decoupling (Crilly, Zollo, & Hansen, 2012); b) for Value Articulation activities such as the promotion of structural embeddedness of societal values (Gehman et al., 2013), the prevention of policy-practice decoupling (Crilly et al., 2012) and the simultaneous pursuit of contradictory values (Hahn et al., 2016); and c) for Value Reflexivity practices such as monitoring of standards (Bessant, 2013); midstream modulation interventions (Fisher, Mahajan, & Mitcham, 2006); preventing of over-reliance on institutionalized knowledge (Zietsma, Winn, Branzei, & Vertinsky, 2002), ongoing reconfigurations of values practices (Gehman et al., 2013) and organizational adaptability through continuous innovation (Ortiz-de-Mandojana & Bansal, 2016). However, the insights of both fields so far have been disconnected. Our framework provides the structure to build these connections, thus allowing RRI scholars to learn from CSR theories about the drivers and barriers of socially responsible behavior of firms and the CSR scholars to build upon RRI insights about handling uncertainties of innovation and governing the collective responsibility for its process and outcomes.

Second, as VAC is built upon the notion of AC, our framework does not neglect the valuable work done by innovation and knowledge absorption scholars. For example, VAC emphasizes the paradox underlying all innovation theories: the balance between consistency on the one side and flexibility and responsiveness on the other side. Our study shows that within a firm a consistent articulation is required to prevent decoupling or greenwashing and to ensure that a firm responds to a societal value with all its business practices in order to have the largest possible contributions to grand challenges. At the same time, the firm operates in a dynamic environment with a plurality of understandings of societal values that evolve over time and in order to survive in this environment, a firm needs to be sensitive to this plurality, be flexible in its responses and be open to reconsider its preconceptions (Gehman et al., 2013). Finding this balance is the cornerstone of the Dynamic Capabilities literature (Teece et al., 1997) and thus its insights are essential for the further development of the VAC framework.

Third, however, our VAC framework also challenges the assumptions of innovation theories and their narrow scope of valuable knowledge and knowledge sources. Our investigation of the firms' responses to value conflicts between stakeholders shows the normative complexity of absorbing values (Swanson, 1999). By not addressing these conflicts, the traditional AC framework does not provide an answer to barriers raised by this normative complexity. In further investigating this complexity, AC scholars and other scholars should take into account one limitation of our study. In our case study we focused on one particular societal value, which limits us in drawing conclusions on the extent to which VAC dimensions of a firm can transcend from absorption of one societal value (for example *health*) to another societal value (such as *environmental protection*). On the one hand, as two dimensions are dependent on the firm's stakeholder engagement in that particular domain, there is reason to assume that the firm's VAC differs per societal value. On the other hand, the three dimensions all have characteristics that can be inherent to a firm's organizational culture – such as the openness to divergent views – which would imply the existence of an overall bottom-line VAC within a firm. Although other theories have also been built on cases regarding one particular value or value aspect (e.g. Gehman et al., 2013; Hahn et al., 2014), the possible value-specificity of VAC should be taken into account in future its future development.

Fourth, such investigations in the absorption of multiple societal values should also take into account the normative dilemma of prioritization. Firms are per definition limited in their resources for building VAC, how should a firm prioritize the societal values that are relevant for its business? In AC theories the selection of new knowledge to be absorbed is determined by the expected competitive advantage they bring (W. M. Cohen & Levinthal, 1990). However, as observed in our case study and highlighted by other scholars, this criterion is often translated to knowledge absorption strategy that prioritizes knowledge providing short-term and low-risk financial gains and thus underrates knowledge on societal values representing long-term but more uncertain social value outcomes (Ortiz-de-Mandojana & Bansal, 2016). As shortsighted and risk adverse behavior has been a main research topic in their field, this research question could be interesting challenge for innovation scholars. However, it does bring an additional uncertainty to their theories and models: the conflicting and changing views on what is societally desirable for innovation, both in its outcome and as its process. By developing our VAC framework, we aim to initiate further research on how to sensitize the innovation processes to societal values that are not directly reflected by consumer purchase behavior and thus provide short-term financial gains.



## Chapter 4.

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### WHEN THE AIM OF INNOVATION GOES BEYOND COMPETITIVE ADVANTAGE: EMPIRICAL EVIDENCE ON HOW FIRMS ABSORB KNOWLEDGE FOR RESPONSIBLE INNOVATION.

#### Abstract

The increasing call for firms to act upon grand societal challenges requires capabilities beyond traditional Absorptive Capacity and Open Innovation concepts, challenging firms to open up their innovation process beyond inter-firm partnerships and to become more sensitive to societal values and value conflicts. To identify the capabilities supporting firms in these intra-organizational challenges, this paper, first, synthesizes the Responsible Research and Innovation (RRI) and Corporate Social Responsibility (CSR) literature to develop the Value-sensitive Absorptive Capacity (VAC) framework. Second, its three dimensions are transformed in a survey-based instrument. The construct and concurrent validity of the instrument is explored in a multilevel analysis including 109 employees, especially from R&D and Marketing & Sales, of 30 food manufacturing firms. By presenting the VAC framework, this article exposes the value conflicts faced when aiming to conduct RRI and the capabilities firms need to handle them.

*This chapter is based on:*

Garst, J., Blok, V., Jansen, L., & Omta, O.S.W.F. (submitted). When the aim of innovation goes beyond competitive advantage: empirical evidence on how firms absorb knowledge for Responsible Innovation. *Journal of Business Ethics*.

## 4.1 Introduction

Since the start of the 21<sup>st</sup> century, the field of innovation management has seen two major theoretical developments, both challenging the foundations of the traditional innovation management model regarding the exploration and exploitation of external knowledge. First, Open Innovation (OI) disputes the traditional, ‘proprietary’ view that self-reliant firms with heavily controlled, internal R&D processes are only able to turn knowledge into breakthrough discoveries (Chesbrough, 2006; West & Gallagher, 2006). In conceptualizing OI, Chesbrough indicated that commercial innovation should not happen solely within the boundaries of the firm, but to be able to create breakthrough innovations a firm needs to open the doors of its innovation process for other firms and organizations (Chesbrough, 2006). Only then will the firm develop dynamic capabilities which will secure a long-term competitive advantage and thus enable the survival of the firm in a dynamic environment (Chesbrough, 2006; Teece, 2009).

The second theoretical development, Responsible Research and Innovation (RRI), has a similar desire to open up the innovation process, however, with a different underlying motive (Voegtlin & Scherer, 2017). In the last decennia, grand societal challenges have become more apparent and urgent, but due to their complex nature and often global scope, they require a large number of societal actors to collaborate in innovative solutions (Voegtlin & Scherer, 2017). For innovation to contribute to solving grand challenges, RRI scholars indicate that it needs to be managed “with a view to the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products” (Von Schomberg, 2011, p. 9). Defining (ethical) acceptability, sustainability and societal desirability in a set of common goals – such as done in the Sustainable Development Goals (SDGs) – is only a first step (Voegtlin & Scherer, 2017). According RRI scholars, these goals need to be translated to individual innovations and the responsibility of this process and its outcomes needs to be shared among the societal actors involved (Owen et al., 2013). Only by opening up the innovation process to external stakeholders, the innovator will be able to explore the meaning of (ethical) acceptability, sustainability and societal desirability for their innovation and adjust its design accordingly (Stilgoe et al., 2013; Van den Hoven, 2013). Consequently, the governance of innovation needs to radically change, both at system level and firm level (Blok & Lemmens, 2015).

Both OI and RRI are thus calling firms to open up their innovation process, but as their purpose differs so does emphasis on whom to include in the innovation process and the type of knowledge these stakeholders bring to the table. The OI's emphasis on creating competitive advantage recommends firms to open up their doors for other firms that generate – mainly technological – complementary knowledge (Huizingh, 2011; Long & Blok, 2018). This emphasis is in agreement with the aims of traditional innovation management and resource-based view theories and makes the organizational capabilities identified by these scholars – such as Dynamic Capabilities and Absorptive Capacity (W. M. Cohen & Levinthal, 1990; Teece, 2009) – applicable to OI (Spithoven, Clarysse, & Knockaert, 2011). On the contrary, RI's aim for inclusive innovation is for firms to define (ethical) acceptability, sustainability and societal desirability, which are captured in a society's values (Owen et al., 2013; Wartick & Cochran, 1985). Their definition of inclusiveness goes, thereby, beyond commercial parties (Dignum et al., 2015; Stilgoe et al., 2013). As the design of an innovation is never value-neutral (Van den Hoven, 2013), the complexities that societal values bring to the table – e.g. value translation and value prioritization conflicts between stakeholders (Manders-Huits, 2011) – need to be taken into account when opening up innovation. By focusing on a limited set of stakeholders as knowledge sources and not investigating possible value conflicts between stakeholders, traditional innovation theories and OI have neglected this complexity. It is therefore highly questionable whether the organizational capabilities that traditional innovation theories prescribe support firms in creating responsible innovations that contribute to solving grand challenges.

Although RRI scholars have started to outline which capabilities an innovator requires to incorporate societal values in innovation processes (e.g. Lubberink, Blok, van Ophem, van der Velde, & Omta, 2018; Stilgoe et al., 2013), they have not fully engaged with the existing organizational theories on commercial innovation and knowledge absorption. In our article, we, therefore, pose the following question: if the purpose of commercial innovation is not only firm survival but also contributing to solutions for grand challenges, what capabilities does a firm require to sensitize its innovation to societal values? The objective of this study is to answer this question with two stages. First, a theoretical framework is developed showing how the framework of Absorptive Capacity provides a good foundation for investigating the absorption of external knowledge but at the same time has a too limited scope to encompass the complexities of absorbing societal values. With this framework, we contribute to research regarding the intra-organizational challenges of RRI when firms aim to contribute to the solutions of grand societal challenges.

Second, we develop a survey instrument to illustrate how other capabilities identified by RRI and Corporate Social Responsibility (CSR) scholars can transform AC in a more value-sensitive framework and support firms in creating responsible innovation outcomes. Surveying a sample of 109 employees in the food manufacturing firms about their firms' response to the societal call for healthy food, we identify four dimensions of Value-sensitive Absorptive Capacity (VAC). Our initial exploration signals positive results for the construct and concurrent validity of the three of the four VAC dimensions. By presenting this new VAC concept and its survey instrument, we hope to stimulate further development of value-sensitive innovation theories.

## 4.2 Theoretical Framework and Hypotheses

Whether positioned as a way to “cumulatively generate valuable, rare, inimitable, and non-substitutable firm resources that, in turn, may become the foundation for a competitive advantage” (Hawn & Ioannou, 2016, p. 2571) or as way to gain legitimacy from society and not have this legitimacy revoked (Wood, 1991), behaving socially responsible is in the interest of the firm (Swanson, 1999). As this behavior goes beyond the legal responsibilities of a firm (A. B. Carroll, 1979), the firm cannot rely on the regulative rules of society to determine what is socially responsible (Geels, 2004). Instead the firm needs to navigate the normative rules and absorb knowledge about societal values to find ‘the right thing to do’ (Geels, 2004; Swanson, 1999). When investigating the capabilities, a firm requires to absorb knowledge and innovate its business practices in response to its dynamic environment, business management scholars will refer to the traditional management concept of Absorptive Capacity (AC), which we will further describe in the next section.

### 4.2.1 Absorptive Capacity as a dynamic capability

The concept of AC was first introduced by Cohen & Levinthal (1990), who were aiming to describe how the combining of new knowledge acquired from external sources and prior knowledge in the firm can lead to innovation and thus competitive advantage. Although in succeeding years the concept was referred to, AC's conceptual relevance was assured by Zahra & George (2002) when they described it as a dynamic capability consisting of four dimensions. The knowledge absorption process starts with the first dimension, acquisition, referring to the ability of the firm to identify new knowledge from its environment and recognize the relevance of such knowledge (Lane et al., 2006; Todorova & Durisin, 2007; Zahra & George, 2002). Knowledge acquisition is connected to processes such as environmental scanning and ‘information searches’ (Flatten, Engelen, Zahra, & Brettel, 2011). The second dimension of AC is assimilation, in which a firm

analyses and interprets the new knowledge to understand it (Zahra & George, 2002). To facilitate this understanding, the knowledge needs to be disseminated within the firm (Flatten et al., 2011), which happens through socialization and externalization of the knowledge (Nonaka, 1994). Once the knowledge is assimilated, it needs to be combined with existing knowledge to be able to utilize it, which marks the third dimension: knowledge transformation (Zahra & George, 2002). The fourth and last dimension of Zahra & George's AC framework is exploitation: the firm's capability to "refine, extend, and leverage existing competencies or to create new ones by incorporating (...) transformed knowledge into its operations" (Zahra & George, 2002, p. 190).

Since its publishing, this framework has become the most prominent model for studies on AC (Apriliyanti & Alon, 2017) and has been critically elaborated upon by several scholars (Lane et al., 2006; Lewin et al., 2011; Todorova & Durisin, 2007; Volberda et al., 2010). Two main elaborations should be taken into account. First, where the framework of Zahra and George is often used as a linear model, other scholars have noted that knowledge absorption is a reiterative process. Thereby, multiple feedback loops should be present between the AC dimensions and the need for reflection routines should be emphasized in encompassing learning processes into AC (Lewin et al., 2011; Nonaka, 1994; Todorova & Durisin, 2007). Second, in their framework Zahra & George have categorized the four dimensions further into 'potential AC' and 'realized AC' (Zahra & George, 2002). However, both conceptual work (Lane et al., 2006; Todorova & Durisin, 2007) as well as empirical studies (Jansen, Van Den Bosch, & Volberda, 2005) show that a four-dimension model of AC is superior over a two-dimension model in representing its complex and long-term role in organizations. In this paper, we will therefore refer to the four-dimension framework of AC taking into account the possible feedback loops between them.

Although the AC framework might fit with our focus on the absorption of knowledge by firms in order to stimulate innovation, the number of studies that have studied the ability of AC to create social value is limited (e.g. Pinkse, Kuss, & Hoffmann, 2010; Riikinen, Kauppi, & Salmi, 2017) and their framing of the AC concept does not allow us to answer our research question because of two reasons. First, AC - and the related OI literature - have mainly focused on other firms or (commercial) research institutes as the main source for new knowledge (Huizingh, 2011). As these parties have the same objectives for the interaction - i.e. gaining sustained competitive advantage - the chances of conflict are limited (Long & Blok, 2018). However, RRI scholars stress the importance of engaging non-commercial parties in order to produce responsible innovation

outcomes (Dignum et al., 2015). RRI and CSR literature show that when firms interact with stakeholders with non-commercial objectives, conflicting views on values are more probable (Blok & Lemmens, 2015; Bundy, Vogel, & Zachary, 2018; Dignum et al., 2015; Moog, Spicer, & Böhm, 2015). The ability to absorb knowledge from these non-commercial parties will thus require other capabilities from the firm than previously indicated by AC and OI scholars.

Second, the type of knowledge that, according to AC scholars, a firm needs to absorb for competitive advantage is mainly limited to technological knowledge (Lane et al., 2006; Volberda et al., 2010). However, as technology ethicists have shown, a technology expresses its designer's perception of what is desirable and acceptable but does not necessarily articulate what society thinks is desirable and acceptable (Van den Hoven et al., 2012). To determine what is societally desirable and ethically acceptable, firms require other types of knowledge. For example, in their paper on the influence of AC on the diffusion of environmental practices within a multi-national enterprise, Pinkse et al. (2010) identified that the context-specificity of environmental issues hindered the implementation of a global environmental strategy. The type of knowledge underlying this context-specificity are societal values. In the next section, we explain what these societal values are and why their absorption requires other knowledge sources and different capabilities than AC scholars have traditionally investigated.

#### 4.2.2 Capabilities for Responsible Innovation: Value-sensitive Absorptive Capacity

Societal values represent what is seen as “good for people and planet” and if an innovation needs to contribute to societal grand challenges the innovator needs to take these values into consideration (Van den Hoven, 2013; Voegtlin & Scherer, 2017). In this paper, values are defined as “(a) concepts or beliefs, (b) about desirable end states or behaviors, (c) that transcend specific situations, (d) guide selection or evaluation of behavior and events, and (e) are ordered by relative importance” (Schwartz & Bilsky, 1987, p. 551). The adjective ‘societal’ is used to indicate that the concepts or beliefs are present in society and that compliance to these values provides firms with moral legitimacy (Suchman, 1995). Thereby, the concept societal values is distinctive from the concept ‘social value’, which describes the beneficial impact of the firm's output on society as a whole (Gehman et al., 2013). CSR scholars have previously emphasized the importance of societal values for socially responsible behavior (Swanson, 1999). However, studies investigating these values have focused on internal ‘values-work’ discussing the institutionalization of a societal value within an organization (Athanasopoulou & Selsky, 2015; Gehman et al.,

2013; Hahn et al., 2014; Plambeck & Weber, 2009) and only limitedly discuss the interaction between the firm and external stakeholders about values, which is crucial (Hawn & Ioannou, 2016; Watson et al., 2017).

In analyzing the integration of societal values in firms, both CSR and RRI scholars have observed conflicts to appear when applying them to innovation or general business practices. Studies on Value Sensitive Design show a distinction between two types of conflicts. First, inter-value conflicts are observed when two or more societal values are incompatible in one solution (Dignum et al., 2015; Manders-Huits, 2011). In the RRI field, these incompatibilities are often observed at the design-level of an innovation when trying to combine requirements of multiple values – e.g. sugar-reduction for ‘health’ and sweetness for ‘enjoyment’ – in one design (Flanagan et al., 2008). However, CSR scholars have observed these inter-value conflicts also at an organizational level as pre-conceptions about the incompatibility of values – e.g. products targeting ‘enjoyment’ cannot comply with ‘health’ requirements – which could lead to normative myopia (Swanson, 1999). Second, disagreements between stakeholders were observed by RRI scholars on how societal values should be specified and incorporated in a design of an innovation, referred to as intra-value conflicts (Dignum et al., 2015). For example, disagreements about replacing sugar with low-caloric artificial sweeteners to make a product healthier is an ongoing intra-value conflict (Shankar, Ahuja, & Sriram, 2013).

The RRI and CSR literature provide some indications of capabilities or activities that could support a firm in handling value conflicts and act more socially responsible. Although for several of these capabilities empirical evidence exists, these studies have often focused on one capability and do not position them as complementary. As shown by the studies on AC, investigating a combination of capabilities allows for deeper analyses of the interconnectedness between the capabilities and their impact on firm performance (Volberda et al., 2010). Therefore, in reviewing the RRI and CSR literature on capabilities, we identified three main categories of capabilities that could support a firm in handling value conflicts and innovating more socially responsible. Below the definitions are provided for each of three categories, which we refer to as the three dimensions of Value-sensitive Absorptive Capacity (VAC).

The first dimension is Value Receptivity, defined as the firm’s capability to understand a societal value. As indicated in the RRI literature, an innovator – in our context, the firm – needs to first discover the values that are relevant for its innovation processes and outcomes and to anticipate changes in these values over time (Nissenbaum, 2005; Owen et al., 2013). To facilitate this discovery and anticipation, CSR scholars have previously

identified practices for monitoring of the external environment – such as environmental scanning and cue sensing – that support firms in acting upon societal issues (Ortiz-de-Mandojana & Bansal, 2016; Wood, 2010). However, RRI scholars indicate that this monitoring should not only be a passive conduct but needs to entail proactive and inclusive deliberation with stakeholders (Manders-Huits, 2011; Stilgoe et al., 2013). Furthermore, RRI scholars have indicated that these external practices should be combined with internal philosophical exploration of the new insights (Nissenbaum, 2005). Such exploration might prevent of means-end decoupling, as it allows the firm to evaluate the different definitions of a value in society (Crilly et al., 2012).

The second dimension is Value Articulation, which is defined as the firm's capability to communicate a societal value within its organization. The first practice in this dimension is the specification of the societal value to design requirements for the firm's processes and products (B. Friedman et al., 2002; Nissenbaum, 2005). The second practice of Value Articulation is the implementation of these design requirements, which varies in two ways between firms: a) the consistency of communication on the value definition among different business practices; b) balancing exceptions-to-the-rule related to the definition of the value. Previous studies of internal 'value work' show that consistent articulation of a value promotes the structural embeddedness of that value (Gehman et al., 2013). Such consistency can support the firm in preventing that intra-value conflicts arise within its own organization. For acting upon inter-value conflicts, balancing exceptions is essential. Although exceptions-to-the-rule can lead to policy-practice decoupling (Crilly et al., 2012), they are sometimes required for the simultaneous pursuit of contradictory values and promoting continuous innovation (Flanagan et al., 2008; Hahn et al., 2016). As observed in the case study, firms that clearly labeled exceptions and only accepted them conditionally were able to maintain consistent articulation.

The third and last dimension of VAC is Value Reflexivity, defined as the firm's capability to evaluate its role in acting upon a societal value and respond to divergent insights by adjusting its practices. In this dimension a distinction can be made between responsive and defensive firms, in which responsiveness relates to a) internal, second-order reflexivity on the contributions of and assumptions by the firm (Stilgoe et al., 2013) through the monitoring of standards (Bessant, 2013) or midstream modulation interventions in R&D departments (Fisher et al., 2006); b) the active search for feedback from external stakeholders on a firm's practices to prevent over-reliance on institutionalized knowledge in case of external challenges (Zietsma et al., 2002), and c) adjustments to divergent and dynamic views, described previously as ongoing reconfigurations of values practices



(Gehman et al., 2013) and organizational adaptability through continuous innovation (Ortiz-de-Mandojana & Bansal, 2016). In asking for feedback from stakeholders, RRI scholars again stress the importance of deliberation practices that include also non-commercial stakeholders (Dignum et al., 2015; Stilgoe et al., 2013), thus going beyond the traditional and instrumental input-output model of the firm towards a stakeholder model of the firm with a clear normative approach (Donaldson & Preston, 1995).

Therefore, the objective of our study is to explore the complementarity of multiple practices representing the three VAC dimensions. Building on the previous literature and a qualitative study in the food industry (Garst, Blok, Branzei, Jansen, & Omta, 2019), survey items are generated for each of the three VAC dimensions. We explore their complementarity by testing the survey in a sample of 109 employees involved in product innovation in 30 food manufacturing firms active on the Dutch market food firms, conducting the first step for scale development (Hinkin, 1998).

## 4.3 Method

### 4.3.1 Sample and data collection

In order to be able to explore Value-sensitive Absorptive Capacity of the firms in responsible innovation, the survey was specified for one specific societal value in one specific industry: health and the food manufacturing industry. Over the last three decades, the increase in prevalence of non-communicable diseases (NCD) has increased the pressure on food firms to act upon the diet-related causes of these diseases. Besides the call to adjust their marketing practices and create public awareness of the relationship between food consumption and long-term health impacts, firms are called to reformulate their products and innovate their product portfolio to support NCD prevention (Hawkes, Jewell, & Allen, 2013). Although in this call the focus is often on ‘avoiding harm’ – such as reducing the energy density of food products which has increased over the years – it also contains elements of ‘doing good’ – for example increasing the dietary fiber content of products to prevent intestinal diseases, amongst others (G. K. Stahl & Sully de Luque, 2014). This context is thereby representative of how firms are requested to more extensively absorb a societal value (i.e. health) in a particular business practice (i.e. product innovation) in order to respond to a grand challenge (i.e. NCD crisis).

The sample of this study was obtained by contacting the members of the Dutch trade organization of food firms; of 169 out of 241 member firms detailed contact information could be obtained. These firms were asked to have at least two employees responsible for product development fill in the employee-survey, ensuring the respondents were

knowledgeable about the firms' product development processes. Additionally, the firm's management was asked to fill in one survey with general firm characteristics. All data was collected from May to August 2018; 109 employees, especially from R&D and Marketing & Sales, of 30 food manufacturing firms completed the questionnaires (a 17.8% response rate at firm level). To test for non-response bias, early and late respondents were compared both at employee level and at firm level for all dependent and independent variables (Armstrong & Overton, 1977). No statistically significant differences between the two groups were observed, indicating a low risk of non-response bias. The characteristics of the sample can be found in Table 4.1. All collected data was analyzed using the SPSS software (IBM Corp., 2015), extended with the SPSS AMOS software (Arbuckle, 2014).

**Table 4.1.** Characteristics of the sampled firms (n=30) and the respondents (n=109).

<i>Firm size</i>		<i>No. of respondents</i>		<i>Geographical market</i>	
0-50 employees	7	2 respondents	9	Netherlands	3
51-100 employees	5	3 respondents	6	Europe	14
101-200 employees	4	4 respondents	10	Global	13
201-500 employees	8	≥5 respondents	5		
>500 employees	6				
<i>Department</i>		<i>No. persons supervised</i>		<i>Years in industry</i>	
R&D	32	0 persons	42	<5 years	19
Marketing & Sales	47	1-5 persons	30	5-10 years	20
Other	30	6-10 persons	16	10-20 years	36
		>10 persons	21	>20 years	34

#### 4.3.2 VAC item development and face validity assessment

The survey instrument for the VAC dimensions was developed in four steps of which the result can be seen in Table 4.2. First, the descriptions of practices in the RRI and CSR literature were synthesized and categorized under the three VAC dimensions (as described previously in the theoretical framework). Second, the dimensions or stages of the main AC frameworks developed over the years were compared to the VAC dimensions on the nature of the practices they describe (W. M. Cohen & Levinthal, 1990; Lane et al., 2006; Todorova & Durisin, 2007; Volberda et al., 2010; Zahra & George, 2002). Thereby, although not completely compatible, clear similarities were seen between, for example, value specification in Value Receptivity and knowledge translation as described by Lane et al. (2006), or the need for Value Reflexivity and the importance of feedback loops for learning as indicated by Todorova & Durisin (2007). An overview of these similarities can be seen in Table 4.2.

Using these similarities, the third step was to design the survey instruments, drawing upon the phrasing of survey items of existing AC instruments (Flatten et al., 2011; Forsman, 2011; Jansen et al., 2005; Lowik, Kraaijenbrink, & Groen, 2016; Yam, Lo, Tang, & Lau, 2011). For example, as many survey items indicated the importance of how often a practice was conducted by using words such as ‘often’, ‘constantly’, ‘always’, ‘regularly’, it was decided to use a 5-point scale from ‘Never’ to ‘Always’ instead of a Likert-scale ranging from ‘completely disagree’ to ‘completely agree’. Fourth and last, the survey items were adjusted to the context, using the interviews and reports from our previous case study of eight food firms (Garst et al., 2019). For example, when referring to stakeholders, a differentiation was made between industry partners and non-commercial stakeholders, as the interviewees made a clear distinction between these groups when discussing engagement activities. The face validity of the items and contextualization was evaluated by a panel of five (former) employees of food firms, which led to rephrasing of several ambiguous items.

In the end, 25 items were taken up in the survey instrument with seven items for Value Receptivity, nine items for Value Articulation and eleven items for Value Reflexivity (see Table 4.2). The respondent’s score per dimension was calculated by taking the mean of the item scores. The VAC-dimension scores per firm were calculated by taking the mean score per item for the firm and then calculating the overall mean per dimension for the firm.

#### 4.3.3 Item reduction: Exploratory Factor Analysis

Since the study concerned the development of a new instrument, any adjustment of the scores would distort the result and thus the missing values were not imputed. Exploratory Factor Analysis (EFA) was used to identify the dimensions for VAC (Maximum Likelihood, eigenvalue >1, oblique rotation with direct oblimin). After the missing data analysis, six survey items were missing over 18% of the observations (i.e. items 12, 13, 22, 23, 24, 25) and thus they were excluded from further data analyses. Of the remaining nineteen items, two items had between 10 and 15% missing observations and the rest of the items had less than 10%. Using a minimum cutoff level of 0.4 (Field, 2013), we removed four items that showed insufficient loadings on any factor (i.e. items 6, 9, 10 and 11). With the remaining fifteen items, four factors were identified using the rotated factor score and the Cronbach’s alpha for reliability analysis.

#### 4.3.4 Construct Validity Assessment

As VAC is a new concept, the validity of its scale can only be assessed with indirect measures, also referred to as construct validity (Cronbach & Meehl, 1955). In our study,

we used two methods to assess the construct validity of the VAC dimension scales. First, the convergent and discriminant validity of the VAC scales are assessed by comparing their scores with that of comparable constructs and of distinct but related constructs (El Akremi, Gond, Swaen, De Roeck, & Igalens, 2018; Hinkin, 1995; Tracey & Tews, 2005). Second, group differences can be assessed if expected that the scoring on the scale would differ between participants with specific characteristics (Cronbach & Meehl, 1955).

For the convergent validity, we selected the measure of corporate motives for socially responsible behavior, as developed by Paulraj et al (2017). These motives have been indicated to cause differences in responses of firms to social and environmental issues and thus can be seen as antecedents of socially responsible behavior (Bansal & Roth, 2000; Paulraj et al., 2017; Windolph et al., 2014). In measuring these motives, Paulraj et al. (2017) identified with their 10-item survey measured on 5-point Likert scale (Strongly disagree – Strongly agree) three distinct motive categories: a) moral motives, b) instrumental motives, c) relational motives. However, a qualitative study on food product development indicated that the latter motive might be less relevant for this particular context (Garst et al., 2017). Confirmatory Factor Analyses (CFAs) were used to compare the three-factor and two-factor model.

**Table 4.2a.** Overview of survey items for Value Receptivity.

<i>Items – In our firm...</i>	<i>CSR/sustainability/RRI literature</i>	<i>AC/knowledge management literature</i>
<i>(1) ... 'healthiness' is an important value.</i>	Anticipation (Owen et al., 2013); Value selection (Swanson, 1999); issue identification (Bansal, 2003)	Understanding new knowledge (Lane et al., 2006);
<i>(2) ... the meaning of 'healthiness' is reflected upon.</i>	Anticipation (Owen et al., 2013); philosophical reflection (Nissenbaum, 2005);	Understanding new knowledge (Lane et al., 2006);
<i>(3) ... the meaning of 'healthiness' is discussed with companies within the sector.</i>	Inclusive deliberation through stakeholder engagement (Owen et al., 2013); moral dialogue (Swanson, 1999); sensing (Ortiz-de-Mandojana & Bansal, 2016)	Knowledge acquisition (Flatten et al., 2011)
<i>(4) ... the meaning of 'healthiness' is discussed with non-commercial organizations.</i>	Inclusive deliberation through stakeholder engagement (Owen et al., 2013); moral dialogue (Swanson, 1999); sensing (Ortiz-de-Mandojana & Bansal, 2016)	Knowledge acquisition (Jansen et al., 2005)
<i>(5) ... developments in nutritional standards and guidelines are being monitored.</i>	Environmental scanning (Hahn et al., 2014; Wood, 2010); external affairs management (Swanson, 1999); monitoring of standards (Bessant, 2013)	Recognizing new knowledge (Lane et al., 2006)

**Table 4.2b.** Overview of survey items for Value Articulation

<b>Items – In our firm...</b>	<b>CSR/sustainability/RRI literature</b>	<b>AC/knowledge management literature</b>
<i>(6) ... we experience difficulties in translating societal health desires into product specifications. (reversed-coded)</i>	Value specification (B. Friedman et al., 2002; Nissenbaum, 2005; Van de Poel, 2013)	Translating of knowledge (Lane et al., 2006)
<i>(7) ... changes in societal health desires are easily shared between departments.</i>	Value retention through informal decision making (Swanson, 1999)	Replication of knowledge (Zollo & Winter, 2002); knowledge assimilation (Flatten et al., 2011; Jansen et al., 2005)
<i>(8) ... there are clear objectives for healthier product development.</i>	Value retention through formal decision making (Swanson, 1999); code existence (Miska, Stahl, & Fuchs, 2018)	Translating of knowledge (Lane et al., 2006); internal selection of knowledge (Zollo & Winter, 2002); recodification (Zahra & George, 2002)
<i>(9) ... there are disagreements regarding the definition of 'health'. (reversed coded)</i>	Intra-value conflict (Dignum et al., 2015); opposite of structural embeddedness of societal values (Gehman et al., 2013); opposite of code existence (Miska et al., 2018)	Lack of heuristics in knowledge assimilation (Zahra & George, 2002)
<i>(10) ... for every product development we check whether the product can be made healthier.</i>	Value enactment (Swanson, 1999); structural embeddedness of societal values (Gehman et al., 2013)	Exploitation of knowledge (Lane et al., 2006); routinization (Zahra & George, 2002; Zollo & Winter, 2002)
<i>(11) ... in order to achieve health specifications, we lower our standards for other product specifications (e.g. taste, price).</i>	Value enactment (Swanson, 1999); simultaneous pursuit of contradictory values (Hahn et al., 2016); Value resolution by compromising between conflicting values (Flanagan et al., 2008; Nissenbaum, 2005)	Exploitation of knowledge (Lane et al., 2006); bisociation (Zahra & George, 2002)
<i>(12) ... new solutions for achieving health specifications are shared between product development teams.</i>	Value enactment (Swanson, 1999); continuous innovation (Flanagan et al., 2008; Ortiz-de-Mandojana & Bansal, 2016)	Exploitation of knowledge (Lane et al., 2006); knowledge variation (Zollo & Winter, 2002); knowledge assimilation (Flatten et al., 2011)
<i>(13) ... the same recipes or ingredients are used to comply with health specifications. (reversed coded)</i>	Conformity with myopia (Swanson, 1999); over-reliance on institutionalized knowledge (Zietsma et al., 2002); acting upon 'low hanging fruits' (Crane et al., 2014)	Exploitation of knowledge (Lane et al., 2006); opposite of knowledge variation (Zollo & Winter, 2002); opposite of knowledge transformation (Flatten et al., 2011)
<i>(14) ... prior to the market launch, a product is assessed on its health specifications.</i>	Value enactment (Swanson, 1999); structural embeddedness of societal values (Gehman et al., 2013); code enforcement (Miska et al., 2018)	Exploitation of knowledge (Lane et al., 2006); routinization (Zahra & George, 2002)

**Table 2c.** Overview of survey items for Value Reflexivity.

<b>Items – In our firm...</b>	<b>CSR/sustainability/RR I literature</b>	<b>AC/knowledge management literature</b>
<i>(15) ... all departments are consulted when drawing up specifications for healthier product development.</i>	Hierarchical expansion of value information (Swanson, 1999)	Knowledge transformation (Jansen et al., 2005); reframing (Zahra & George, 2002); feedback loops (Todorova & Durisin, 2007)
<i>(16) ... the results of healthier product development are shared between departments.</i>	Issue selling (Bansal, 2003)	Knowledge assimilation (Flatten et al., 2011); feedback loops (Todorova & Durisin, 2007)
<i>(17) ... after market launch, the feedback of stakeholders on the health specifications of the product is monitored.</i>	Value verification (Nissenbaum, 2005)	Knowledge acquisition (Flatten et al., 2011)
<i>(18) ... the definition of specific societal health desires is discussed with companies in the sector.</i>	Reflectivity on value specification through stakeholder engagement (B. Friedman et al., 2002; Owen et al., 2013)	Feedback loops (Todorova & Durisin, 2007)
<i>(19) ... the definition of specific societal health desires is discussed with non-commercial organizations.</i>	(same as above)	(same as above)
<i>(20) ... when developing specifications for healthier product development, we discuss them with companies in the sector.</i>	(same as above)	(same as above)
<i>(21) ... when developing specifications for healthier product development, we discuss them with non-commercial organizations.</i>	(same as above)	(same as above)
<i>(22) ... during product development the health specifications are discussed with companies in the sector.</i>	Reflectivity on value resolution through stakeholder engagement (Nissenbaum, 2005; Owen et al., 2013)	(same as above)
<i>(23) ... during product development the health specifications are discussed with non-commercial organizations.</i>	(same as above)	(same as above)
<i>(24) ... the feedback of companies in the sector on our healthier product developments falls on deaf ears. (reversed-coded)</i>	Opposite of ongoing reconfigurations of values practices (Gehman et al., 2013)	Knowledge exploitation (Jansen et al., 2005)
<i>(25) ... the feedback of non-commercial organizations on our healthier product developments falls on deaf ears. (r-c)</i>	(same as above)	(same as above)

Based on the results of the Tucker-Lewis Index (TLI), the Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA) (El Akremi et al., 2018), an alternative three-factor model was found to be the best fitting model ( $X^2$ :  $p = 0.175$ ; TLI = 0.951; CFI = 0.972; RMSEA = 0.046). The details of these analyses can be found in Appendix C. As this alternative model had a slightly different structure than indicated by Paulraj et al. (2017), the third factor consisted only of two items regarding the concerns and demands of firm owners or shareholders and its aggregate scores showed no significant difference between firms ( $p = 0.124$ , other two factors:  $p < 0.001$ ). We thus decided to leave the third motive category out of the analysis, focusing only on the moral motives and the instrumental motives.

The convergent validity of the VAC dimensions is assessed with the moral motive scores. When a firm is driven by moral motives, its action are determined by its perceived “ethical duty to make a positive contribution to the environment and society and create a better world for the future” (Paulraj et al., 2017, p. 244). As the concept of VAC is targeted at absorption of societal values and norms, these morality-based motives are likely to be positively connected to the VAC dimensions. We thus expect the following:

*Hypothesis 1:* The VAC dimensions relate positively to moral motives.

On the other hand, previous studies have shown that motives of a firm do not completely determine its socially responsible behavior, other factors also enable and disable CSR-related capabilities (Brønn & Vidaver-Cohen, 2009; Paulraj et al., 2017). Therefore, the moral motives are related but distinct from the VAC dimensions, as required for discriminant validity. In addition, with their focus on self-interest, the instrumental motives are found to be limited in their ability to stimulate socially responsible practices (Bansal & Roth, 2000; Paulraj et al., 2017). Although responding to a societal value might provide the firm with benefits on the short-term, these benefits are often not enough to develop capabilities to thoroughly understand and incorporate a societal value (Garst et al., 2019; Slawinski & Bansal, 2015). A weak relationship between instrumental motives and the VAC dimensions would thus support for discriminant validity. These expectations lead us to the following hypotheses:

*Hypothesis 2a:* The VAC dimensions are related to but distinct from moral motives.

*Hypothesis 2b:* The VAC dimensions relate weakly to instrumental motives.

Consistent with previous validation efforts, a combination of EFA and CFA was used to assess the convergent and discriminant validity of the VAC scales (El Akremi et al., 2018;

Tracey & Tews, 2005). Although it is preferable to conduct EFAs and CFAs on independent samples, as Tracey & Tews (2005) indicated, using both can provide detailed understandings of the dimensions of the assessed scales, which fits our study's objective to explore the characteristics of the VAC dimensions. For the EFAs (Maximum Likelihood, eigenvalue >1, oblique rotation with direct oblimin), the items for the VAC dimensions were added together with the items of, first, the moral motives and, second, the instrumental motives. Items with factor loadings of 0.40 or higher on one factor were used to assign items to a factor (Tracey & Tews, 2005). For the CFAs, the items of each VAC dimension were added with either the items of the moral motives or the items of the instrumental motives. Then for all combinations a discriminant two-factor model was compared to a unitary one-factor model on basis of their results for the TLI, the CFI and the RMSEA and the chi-square differences between the two types of models. Furthermore, the correlations between the latent variables were calculated.

To assess the group differences, the respondents were classified on four aspects (see Table I): a) number of employees they supervise; b) number of years employed by the firm; c) number of years employed in the food industry; d) department within the firm. One-way ANOVA's with post-hoc analyses were conducted to determine whether there were significant between group differences.

#### 4.3.5 Aggregation

As our survey measured the VAC dimensions at employee level but they account for organizational level capabilities, we calculated the interrater agreement (IRA) indices for each of the VAC dimensions to determine the extent to which they reflect a firm-level phenomenon (LeBreton & Senter, 2008). To assist these calculations, we used the tool developed by Biemann et al. (2012), based on the  $r_{wg}$  method by James et al. (1993).

#### 4.3.6 Concurrent validity

Since we theorize that the VAC dimensions influence the innovation outcomes of a firm, a criterion-oriented validation procedure is also in order to explore the validity of the VAC scales (Cronbach & Meehl, 1955). Preferably the predictive validity would be measured, but due to the exploratory nature of the VAC construct we were not able to establish how large the time-lag should be before the effects of VAC on the innovation outcomes would be expected. Thus, a concurrent validity procedure was used to establish the effect of VAC on the innovation outcomes of the firm (Cronbach & Meehl, 1955).



To determine how value-sensitive the outcomes of the firms' product innovation were, RRI Performance was measured in two manners. First, the employees were asked to compare their firm to its three main competitors on a 7-point scale ('Much lower than the competitor' - 'Much higher than the competitor') on three innovation aspects: a) the number of healthier products introduced in the market; b) the number of radical innovations for healthier products; c) the number of reformulations for a healthier product portfolio. An EFA confirmed that all three items loaded highly on one factor (factor loadings > 0.85). As the VAC dimensions are theorized to have a positive influence on the perceived performance, a positive correlation is expected:

*Hypothesis 3a:* The VAC dimensions are positively correlated with the Perceived RRI Performance.

However, the Perceived RRI Performance variable had two disadvantages: a) its susceptibility to common method bias since it was measured through the same survey as the independent variables; b) not measuring the value sensitivity of the firms' actual products. Therefore, a second dependent variable was developed. In manufacturing firms, two types of innovation activities are observed: a) reformulation of existing products; b) development of new products (Cooper, Edgett, & Kleinschmidt, 2001). Therefore, data was collected per firm on a) the three to five best-selling products; and b) the three to five latest product introductions (number depended on the portfolio size of the firm). To determine the value-sensitivity of these products, their nutritional compositions were compared with the scientifically validated criteria of the health label of the Dutch Choices Foundation, the only front-of-pack health label allowed in the Dutch food market between 2006 and 2018 (Roodenburg et al., 2011). These criteria regard activities of 'avoiding harm' by promoting the reduction of energy, saturated fats, and sodium levels, as well as 'doing good' by promoting the increase of dietary fiber content (G. K. Stahl & Sully de Luque, 2014). The standardized differences between each criterion and the product composition were added up to achieve one Nutrition Score per product. For example, Product 1 of Firm A contained 2.0 g/100g of Saturated Fatty Acids (SAFA) while the criterion for its product category is 1.1 g/100g, giving it an absolute score for SAFA of -0.9. After standardizing the SAFA score compared to the other product data and repeating the same procedure for the other nutritional criteria, the standardized scores for each nutritional criterion were counted up, giving the product an RRI Product Score of -0.779. Per firm, the RRI Performance Score was calculated as an average of the RRI Product Scores for that firm (Mean = -0.22; SD = 1.36; Min = -4.51; Max = 2.17). For two firms, the nutritional composition of their products could not be retrieved and thus

the RRI Performance Score could not be calculated for these firms. As the VAC dimensions are theorized to support the firm in absorbing the societal value into their innovation outcomes, a positive correlation is expected:

*Hypothesis 3b:* The VAC dimensions are positively correlated with the RRI Performance Score.

## 4.4 Results

### 4.4.1 VAC item reduction

The EFA showed an adequate sample size ( $KMO = 0.793$ ) and identified a four-factor model, explaining 68.05% of the variance. The reliability analysis showed a Cronbach's Alpha score for each factor well above 0.7 (Field, 2013). Table 4.3 shows the results of the factor analysis and reliability analyses, and the items that were deleted due to low response or low correlation. The result of four instead of three factors can be attributed to a split in the items related to Value Reflexivity. Thereby, asking for feedback from industry partners was not related to asking for feedback from non-commercial organizations, in which the average score of the former was significantly higher than the latter. In the following analyses these two factors will thus be referred to as 'Commercial Value Reflexivity' and 'Non-Commercial Value Reflexivity'. Additionally, although the items loading on the other two factors were not exactly as expected, we will refer to them as 'Value Receptivity' and 'Value Articulation' in the result section.

### 4.4.2 Convergent and Discriminant Validity

In assessing the convergent validity of the VAC dimensions, we first analyze the results of the EFA with the moral motives. Although the EFA resulted a five-factor model as expected, some of the items loaded not on the factors as predicted, as can be seen in Table 4.4. The Moral Motive item "Our firm is developing healthier products because top management considers our impact on public health as a vital part of corporate strategy" (Mot1.4) loaded on factor 4 instead of factor 2 on which the other Moral Motive items loaded. Furthermore, the VAC item "In our firm prior to the market launch, a product is assessed on its health specifications" loaded on factor 2, factor 3 as well as factor 4, but for none of them more than the threshold of 0.4. Re-running the EFA without this item showed no longer cross-loadings between the factors for Moral Motives and Value Articulation. However, this removal further lowered the loadings of the VAC item "In our firm are developments in nutritional standards and guidelines being monitored." (VAC4.4), which already loaded on both factor 3 and factor 4 with

loadings smaller than 0.4. The EFA shows thus that there is an overlap between the items of Moral Motives and of the VAC dimensions.

The CFA results in Table 4.5 show a similar result. Although all proposed two-factor models have a better fit than the unitary one-factor models as the chi-square difference tests were significant ( $\Delta\chi^2(1) > 19.72$ ;  $p < 0.01$ ), the other indicators for model fit indicated a mediocre fit in two of the proposed two-factor models ( $TLI < 0.90$ ;  $RMSEA > 0.08$ ) (Hu & Bentler, 1999). These results indicated that although the two-factor model is superior to the one-factor model, the model for Value Receptivity and Moral Motives and the model for Value Articulation and Moral Motives do not justify a complete separation of both scales. When removing item Mot1.4, the two-factor model for Value Receptivity and Moral Motives does show a good fit ( $TLI = 1.04$ ;  $CFI = 1.00$ ;  $RMSEA < 0.01$ ). Furthermore, rerunning, the two-factor model for Value Articulation and Moral Motives without items VAC4.4 and VAC4.5 also shows a good fit ( $TLI = 1.05$ ;  $CFI = 1.00$ ;  $RMSEA < 0.01$ ). Therefore, the positive and significant correlations between their factors (0.60 and 0.41, respectively), as presented in Table 4.6, can be also attributed to their potential overlap. On the other hand, the two-factor models of Moral Motives and each of the Value Reflexivity dimensions were indicated to be a good fit ( $TLI > 0.90$ ;  $CFI > 0.90$ ;  $RMSEA < 0.08$ ) (Hu & Bentler, 1999). Using Cohen's (1988) standards, the factor correlations can be interpreted as positive, significant but medium relationship between Moral Motives and Non-commercial Value Reflexivity (0.37,  $p < 0.01$ ) and positive, but not significant and too small for Moral Motives and Commercial Value Reflexivity (0.17,  $p > 0.05$ ).

Hypothesis 1 regarding their positive relation with Moral Motives can thus be accepted for Value Receptivity, Value Articulation and Non-Commercial Value Reflexivity, but not for Commercial Value Reflexivity. Hypothesis 2a can be accepted for Non-commercial Value Reflexivity and Commercial Reflexivity, but not for Value Receptivity and Value Articulation as these two dimensions are not completely distinct from Moral Motives.

**Table 4.3.** Results of the exploratory factor analysis and the reliability analyses of the VAC-related survey items.

<b>VAC dimensions</b>	<b>Items – In our firm...</b>	<b>Rotated factor loading<sup>b</sup></b>
<i>Value Receptivity</i> (Eigenvalue = 1.08; Cronbach's $\alpha$ = 0.76)	VAC1.1 ... the meaning of 'healthiness' is reflected upon. (2)	-0.840
	VAC1.2 ... 'healthiness' is an important value. (1)	-0.686
	VAC1.3 ... there are clear objectives for healthier product development. (8)	-0.477
<i>Non-Commercial Value Reflexivity</i> (Eigenvalue = 2.01; Cronbach's $\alpha$ = 0.83)	VAC2.1 ... the meaning of 'healthiness' is discussed with non-commercial organizations. (4)	0.838
	VAC2.2 ... the definition of specific societal health desires is discussed with non-commercial organizations. (19)	0.654
	VAC2.3 ... when developing specifications for healthier product development, we discuss them with non-commercial organizations. (21)	0.564
	VAC2.4 ... after market launch, the feedback of stakeholders on the health specifications of the product is monitored. (17)	0.563
<i>Commercial Value Reflexivity</i> (Eigenvalue = 5.64; Cronbach's $\alpha$ = 0.78)	VAC3.1 ... the definition of specific societal health desires is discussed with companies in the sector. (18)	1.022
	VAC3.2 ... when developing specifications for healthier product development, we discuss them with companies in the sector. (20)	0.596
	VAC3.3 ... the meaning of 'healthiness' is discussed with companies within the sector. (3)	0.481
<i>Value Articulation</i> (Eigenvalue = 1.47; Cronbach's $\alpha$ = 0.73)	VAC4.1 ... all departments are consulted when drawing up specifications for healthier product development. (15)	0.741
	VAC4.2 ... the results of healthier product development are shared between departments. (16)	0.596
	VAC4.3 ... changes in societal health desires are easily shared between departments. (7)	0.498
	VAC4.4 ... developments in nutritional standards and guidelines are being monitored. (5)	0.462
	VAC4.5 ... prior to the market launch, a product is assessed on its health specifications. (14)	0.402

**Table 4.3. (continued)** Results of the exploratory factor analysis and the reliability analyses of the VAC-related survey items.

<i>VAC dimensions</i>	<i>Items – In our firm...</i>	<i>Rotated factor loading<sup>b</sup></i>
<i>Deleted items</i>	... new solutions for achieving health specifications are shared between product development teams. (12)	> 18% missing
	... the feedback of companies in the sector on our healthier product developments falls on deaf ears. (24)	> 18% missing
	... the feedback of non-commercial organizations on our healthier product developments falls on deaf ears. (25)	> 18% missing
	... the same recipes or ingredients are used to comply with health specifications. (13)	> 18% missing
	... during product development the health specifications are discussed with companies in the sector. (22)	> 18% missing
	... during product development the health specifications are discussed with non-commercial organizations. (23)	> 18% missing
	... for every product development we check whether the product can be made healthier. (10)	Low correlation
	... in order to achieve health specifications, we lower our standards for other product specifications (e.g. taste, price). (11)	Low correlation
	... there are disagreements regarding the definition of 'health'. (9)	Low correlation
	... we experience difficulties in translating societal health desires into product specifications. (6)	Low correlation

<sup>a</sup> Number in brackets is equal to numbering in Table 4.2.

<sup>b</sup> Results from pattern matrix

**Table 4.4** Results of the Exploratory Factor Analysis with VAC and Moral Motives.<sup>a</sup>

<i>Variable</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<i>VAC3.1</i>	.987				
<i>VAC3.2</i>	.614				
<i>VAC3.3</i>	.423		-.351		
<i>Mot1.1</i>		.794			
<i>Mot1.2</i>		.671			
<i>Mot1.3</i>		.600			
<i>VAC4.5</i>		.349	-.310	.327	
<i>VAC2.1</i>			-.914		
<i>VAC2.2</i>			-.700		
<i>VAC2.3</i>			-.564		
<i>VAC2.4</i>			-.539	.387	
<i>VAC4.1</i>				.815	
<i>VAC4.2</i>				.681	
<i>VAC4.3</i>				.562	-.313
<i>VAC4.4</i>			-.363	.381	
<i>VAC1.2</i>					-.736
<i>VAC1.1</i>					-.604
<i>Mot1.4</i>					-.541
<i>VAC1.3</i>					-.397

<sup>a</sup> Results from pattern matrix. Only factor loadings greater than 0.3 are presented. VAC1 = Value Receptivity; VAC2 = Non-commercial Value Reflexivity outside industry; VAC3 = Commercial Value Reflexivity; VAC4 = Value Articulation; Mot1 = Moral Motives

**Table 4.5.** Results of the Confirmatory Factor Analysis with VAC and Moral Motives.<sup>a</sup>

<i>Model</i>	<i>X<sup>2</sup> (df)</i>	<i>ΔX<sup>2</sup> (df)</i>	<i>TLI</i>	<i>CFI</i>	<i>RMSEA</i>
<i>VAC1 &amp; Mot1</i> <i>discriminant 2-factor</i>	23.95 (13)		--	0.90	0.95
<i>VAC1 &amp; Mot1</i> <i>unitary 1-factor</i>	43.67 (14)	19.72** (1)	0.75	0.88	0.14
<i>VAC2 &amp; Mot1</i> <i>discriminant 2-factor</i>	15.84 (19)		1.02	1.00	<0.01
<i>VAC2 &amp; Mot1</i> <i>unitary 1-factor</i>	97.26 (20)	81.41** (1)	0.46	0.70	0.19
<i>VAC3 &amp; Mot1</i> <i>discriminant 2-factor</i>	10.70 (13)		1.03	1.00	<0.01
<i>VAC3 &amp; Mot1</i> <i>unitary 1-factor</i>	85.75 (14)	75.05** (1)	0.21	0.61	0.22
<i>VAC4 &amp; Mot1</i> <i>discriminant 2-factor</i>	49.29 (26)		0.83	0.90	0.09
<i>VAC4 &amp; Mot1</i> <i>unitary 1-factor</i>	94.13 (27)	44.84** (1)	0.52	0.71	0.15

<sup>a</sup> TLI = Tucker-Lewis Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation. \*\* p < 0.01 (two-tailed). Variables: VAC1 = Value Receptivity; VAC2 = Non-commercial Value Reflexivity outside industry; VAC3 = Commercial Value Reflexivity; VAC4 = Value Articulation; Mot1 = Moral Motives

**Table 4.6.** Variables at employee level – descriptive statistics and correlations

<i>Variable</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
<i>1. Value Receptivity</i>	-					
<i>2. Commercial Reflexivity</i>	0.22*	-				
<i>3. Non-commercial Reflexivity</i>	0.38**	0.55**	-			
<i>4. Value Articulation</i>	0.53**	0.30**	0.44**	-		
<i>5. Moral motive</i>	0.60**	0.17	0.37**	0.41**	-	
<i>6. Instrumental motive</i>	0.27**	0.02	0.28**	0.24*	0.38**	-
<i>Mean</i>	3.88	3.19	2.89	3.83	4.19	4.12
<i>Standard deviation</i>	0.65	0.75	0.74	0.62	0.61	0.65
<i>Min</i>	2.00	1.00	1.00	2.40	2.00	2.00
<i>Max</i>	5.00	4.67	4.75	5.00	5.00	5.00
<i>Missing</i>	0	6	2	0	1	0

\*Significant with  $p < 0.05$  (Pearson correlation)\*\*Significant with  $p < 0.01$  (Pearson correlation)

The Instrumental Motives and the VAC dimensions are, however, clearly distinct from each other, as can be seen in Table 4.7. Although the EFA shows some cross-loading of items between factors – i.e. VAC item “In our firm, after market launch, the feedback of stakeholders on the health specifications of the product is monitored.” (VAC2.4) loading both on factor 2 and factor 4 – the items for instrumental motives (Mot2) all load on one factor and none of the VAC items load on this particular factor. This distinction between factors is confirmed by the CFA – presented in Table 4.8 – as the two-factor models are all superior to the one-factor models and independently show good fit ( $TLI > 0.90$ ;  $CFI > 0.90$ ;  $RMSEA < 0.08$ ). Only the two-factor model for Instrumental Motives and Value Articulation showing a slightly lower TLI (0.88), but examination of the loadings showed that this lower TLI is most likely due to a low loading of item VAC4.5 on the factor for Value Articulation instead of caused by cross-loading. Furthermore, looking back at Table 4.6, the factor correlations show positive and, in some cases, significant relationships between Instrumental Motives and the VAC dimensions, but as these correlations do not cross the 0.29 threshold they can be regarded as weak (J. Cohen, 1988). Hypothesis 2b can thus be accepted for all four VAC dimensions.

For the between group differences, only the number of years employed by the firm showed a significant difference between groups for Value Receptivity ( $p < 0.01$ ) and Value Articulation ( $p < 0.05$ ). No significant between group differences were found for the number of employees the respondents supervised; the number of years employed in the food industry and the department within the firm.

**Table 4.7.** Results of Exploratory Factor Analysis with VAC and Instrumental Motives.<sup>a</sup>

<i>Variable</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
VAC3.1	1.022				
VAC3.2	.637				
VAC3.3	.496				
VAC4.1		.702			
VAC4.2		.615			
VAC4.3		.581			
VAC4.4		.547		-.320	
VAC2.4		.524		-.461	
VAC4.5		.483		-.348	
Mot2.1			-.827		
Mot2.2			-.743		
Mot2.3			-.707		
Mot2.4			-.514		
VAC2.1				-.794	
VAC2.2	.345			-.622	
VAC2.3				-.520	
VAC1.1					-.838
VAC1.2					-.622
VAC1.3					-.422

<sup>a</sup> Results from pattern matrix. Only factor loadings greater than 0.3 are presented. VAC1 = Value Receptivity; VAC2 = Value Reflexivity outside industry; VAC3 = Value Reflexivity within industry; VAC4 = Value Articulation; Mot2 = Instrumental Motives

**Table 4.8.** Results of Confirmatory Factor Analysis with VAC and Instrumental Motives.<sup>a</sup>

<i>Model</i>	<i>X<sup>2</sup> (df)</i>	<i>ΔX<sup>2</sup> (df)</i>	<i>TLI</i>	<i>CFI</i>	<i>RMSEA</i>
<i>VAC1 &amp; Mot2</i> <i>discriminant 2-factor</i>	18.63 (13)	--	0.94	0.97	0.06
<i>VAC1 &amp; Mot2</i> <i>unitary 1-factor</i>	88.33 (14)	69.68** (1)	0.22	0.61	0.22
<i>VAC2 &amp; Mot2</i> <i>discriminant 2-factor</i>	29.18 (19)		0.93	0.96	0.07
<i>VAC2 &amp; Mot2</i> <i>unitary 1-factor</i>	120.87 (20)	91.68** (1)	0.29	0.61	0.22
<i>VAC3 &amp; Mot2</i> <i>discriminant 2-factor</i>	18.81 (13)		0.93	0.97	0.06
<i>VAC3 &amp; Mot2</i> <i>unitary 1-factor</i>	101.07 (14)	82.26** (1)	0.42	0.52	0.24
<i>VAC4 &amp; Mot2</i> <i>discriminant 2-factor</i>	40.02 (26)		0.88	0.93	0.07
<i>VAC4 &amp; Mot2</i> <i>unitary 1-factor</i>	120.61 (27)	80.59** (1)	0.25	0.55	0.18

<sup>a</sup> TLI = Tucker-Lewis Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation. \*\* p < 0.01 (two-tailed). Variables: VAC1 = Value Receptivity; VAC2 = Value Reflexivity outside industry; VAC3 = Value Reflexivity within industry; VAC4 = Value Articulation; Mot2 = Instrumental Motives



#### 4.4.3 Aggregation and concurrent validity

Before assessing the correlations between the VAC dimensions and the RRI performance measures, the extent to which the VAC dimensions reflect a firm-level capabilities, was assessed with the IRA indices, presented in Table 4.9. All VAC dimensions showed a mean  $R_{wg(I)}$  higher than 0.70 for the rectangular null distribution indicating a strong agreement among respondents of the same firm (LeBreton & Senter, 2008). For the alternative null distribution with slight skew, as recommended by Biemann et al. (2012), both Value Reflexivity dimensions show a mean  $R_{wg(I)}$  of 0.64 which is lower than 0.70 but still indicates moderate agreement between respondents of the same firm. In addition, the respondents also show strong agreement on the scores for Moral Motives, Instrumental Motives and Perceived Performance, for both distributions.

**Table 4.9.** Results of Inter-Rater Agreement for variables measured at employee level

<i>Variable</i>	<i><math>r_{wg(I)}</math> upper limit <sup>a</sup></i>	<i><math>r_{wg(I)}</math> lower limit <sup>b</sup></i>
<i>Value Receptivity</i>	0.90	0.82
<i>Commercial Value Reflexivity</i>	0.77	0.64
<i>Non-commercial Value Reflexivity</i>	0.79	0.64
<i>Value Articulation</i>	0.87	0.75
<i>Moral Motives</i>	0.91	0.82
<i>Instrumental Motives</i>	0.88	0.81
<i>Perceived Performance</i>	0.90	0.84

<sup>a</sup> As measured with rectangular null distribution.

<sup>b</sup> As measured with an alternative null distribution with slight skew.

To assess the concurrent validity for each of the VAC dimensions, the correlations between the VAC dimensions and the performance measures at employee and firm level are presented, respectively, in Table 4.10. At employee level, a positive, significant and strong correlation can be perceived between Value Receptivity and Perceived RRI Performance ( $r = 0.45$ ,  $p < 0.01$ ). Value Articulation shows a positive and significant correlation ( $r = 0.27$ ,  $p < 0.01$ ), but its strength does not reach the 0.29 threshold to be considered a strong correlation (J. Cohen, 1988). Both Value Reflexivity dimensions have neither significant nor strong relationships with Perceived Performance at employee level. Hypothesis 3a can thus be accepted only for Value Receptivity and not for Non-commercial Value Reflexivity, Value Articulation and Commercial Value Reflexivity.

At firm level, however, the correlations at firm level show a different picture. Besides a positive, significant and strong correlation with Value Receptivity ( $r = 0.52$ ,  $p < 0.01$ ), is the RRI Performance Score also the strongly correlated with Non-commercial Value Reflexivity ( $r = 0.46$ ,  $p < 0.05$ ) and Value Articulation ( $r = 0.42$ ,  $p < 0.05$ ). The correlation between the RRI Performance Score and Commercial Value Reflexivity is

not significant ( $r = 0.08$ ,  $p > 0.05$ ). Hypothesis 3b can thus be accepted for Value Receptivity, Non-commercial Value Reflexivity and Value Articulation, but not for Commercial Value Reflexivity.

**Table 4.10.** Results of concurrent validity: correlations of performance indicators

	Employee level	Firm level
	<i>Perceived RRI Performance</i>	<i>RRI Performance score</i>
Value Receptivity	0.45**	0.52**
Commercial Reflexivity	-0.02	0.08
Non-commercial Reflexivity	0.13	0.46*
Value Articulation	0.27**	0.42*
Mean	3.19	-0.22
Standard deviation	1.01	1.36
Min	1.00	-4.51
Max	5.44	2.17
Missing	4	2

\*Significant with  $p < 0.05$  (Pearson correlation, bootstrapped with 2000 samples)

\*\*Significant with  $p < 0.01$  (Pearson correlation, bootstrapped with 2000 samples)

## 4.5 Discussion

Many AC and OI scholars have investigated absorption of knowledge from external sources as a dynamic capability for becoming more innovative and gaining competitive advantage (Apriliyanti & Alon, 2017). However, the increasingly urgent call for firms to act upon grand societal challenges requires capabilities that go beyond the traditional AC concept (Voegtlin & Scherer, 2017), challenging firms to open up their innovation process beyond stakeholders with commercial interests and to become more sensitive to societal values and possible value conflicts (Dignum et al., 2015; Stilgoe et al., 2013). In this paper we have thus synthesized the literature on RRI and CSR on capabilities that could support firms in these social responsibilities, combining them in a theoretical VAC framework with three dimensions: Value Receptivity, Value Articulation and Value Reflexivity. After translating these dimensions in a survey instrument, the results of our empirical study point towards adjustments of each dimension, leading to a slightly altered version of the framework. Furthermore, the assessments of the construct validity and concurrent validity of each VAC dimensions provides us with insights on their relevance for RRI research. In the following sections we discuss the implications of our findings for each of the VAC dimensions and the VAC framework as a whole.

#### 4.5.1 Value Receptivity

The theoretical definition of Value Receptivity focused on the firm's understanding of a value in which a broader understanding is built upon multiple external sources and interconnected value aspects. Although items related to internal conversations of the meaning of the value are incorporated in our final instrument for Value Receptivity, the items on external sources did not load on this same factor (VAC2.1 and VAC3.3). We would thus suggest that our instrument for Value Receptivity represents the firm's practices to establish an internal definition of a value, such as internal philosophical exploration, described by Nissenbaum (2005), and is unrelated to practices of interaction with external sources. This internal focus of the first VAC dimension is confirmed by the inclusion of the development of 'health' objectives (VAC1.3) in the scale for this dimension. Although this practice was interpreted as value specification and thus a theorized fit with Value Articulation (B. Friedman et al., 2002), Bansal (2003) indicated that the development of objectives within an organization can be seen as a cue for issue identification, and thus the practice would fit the establishment of an internal definition of a value.

Furthermore, the results of the construct validity assessments imply that the Value Receptivity is a measure of moral behavior as its scale shows high convergence with the moral motives of the firm. Additionally, the dimension's positive correlation with both measures of RRI performance indicates that the behavior represented by the dimension relates to more responsible innovation outcomes. However, the discriminant validity assessment also shows that although the Value Receptivity measure is clearly distinct from the Instrumental Motives, the scale is not completely distinct from the Moral Motives scale used in this study. Looking closer at the results, the overlap was caused by a motive item indicating the strategic priority to a moral value by higher management (Mot1.4). This item, therefore, describes more than only the moral motives of a firm as prioritizing of societal values can be described as a business practice resulting from moral motives (Bansal & Roth, 2000). The overlap between the two scales might thus be attributed to a lack of discriminant validity of the Moral Motive scale rather than of the Value Receptivity scale.

#### 4.5.2 Value Articulation

For Value Articulation, the conceptual definition emphasized the specification of values and the subsequent implementation of values through consistent communication and balancing exceptions-to-the-rule. The final instrument does indicate an item for each of these elements, but the Value Articulation instrument seems to place a larger emphasis

on inter-department communication on value specification (VAC4.1, VAC4.2 and VAC4.3). Furthermore, the inclusion of the item on monitoring of external standards and guidelines (VAC4.4) shows that these external sources are important not for the development of overall objectives but for translating these objectives to specific product requirements. However, the items regarding active stakeholder engagement for specification do not load on this dimension (VAC2.2, VAC2.3, VAC3.1 and VAC3.2), indicating that the firms that have frequent internal communication about value specification do not necessarily have this frequent communication with external stakeholders. The internal and external communication practices are thus to be clearly separated when defining capabilities for socially responsible behavior, as suggested by Hawn & Ioannou (2016).

Regarding the construct validity of the Value Articulation scale, the convergent validity is confirmed by the positive correlation with the Moral Motives, but the discriminant validity is only partly confirmed. Value Articulation is clearly distinct from the Instrumental Motives scale but not from the Moral Motive scale. Although the item regarding the evaluation of health specifications prior to market launch (VAC4.5) is the main cause of the overlap between Moral Motives and Value Articulation, the removal of this item from the scale also questions the inclusion of the item on monitoring external standards (VAC4.4) to the Value Articulation scale. Therefore, only if the Value Articulation scale focusses solely on inter-department communication on value specification, there is no overlap between Moral Motives and Value Articulation.

Also, regarding its relationship with the RRI performance measure the Value Articulation score shows mixed results, as the Perceived RRI Performance did not strongly correlate with the Value Articulation scale but the firm level RRI Performance Score did. A possible explanation could be related to differences in the measurements: the Perceived RRI Performance scores a firm's performance in comparison to its direct competitors while the firm level RRI Performance Score compares the firm's performance across product categories. This distinction in correlations could indicate that the behavior represented by Value Articulation does not differentiate the performance of firms active in the same product category but does differentiate performance across product categories.

#### 4.5.3 Value Reflexivity

The main difference between the conceptual model and the final instrument comes with the definition of Value Reflexivity. The conceptual definition of this dimension was focused on two practices by the firm: a) evaluating its role in acting upon a societal value;

b) responding to divergent insights by adjusting its practices. The results of the item reduction suggest several changes to this definition. First, in its evaluation of its role, the firm's search for feedback is divided by source: firms that engage with industry partners do not automatically show the same level of engagement with non-commercial organizations. The results of this study emphasize what CSR scholars have indicated previously: in analyzing stakeholder engagement activities of a firm it is important to distinguish between commercial and non-commercial stakeholders (Donaldson & Preston, 1995).

Although the discriminant validity of both the Non-commercial and Commercial scales are supported by our data, their distinction is emphasized by the results from the assessments of their construct and concurrent validity. While the Non-commercial Value Reflexivity scale shows a strong convergence with the Moral Motives scale, the Commercial Value Reflexivity does not show convergence with Moral Motives. The capability to ask for feedback from non-commercial stakeholders (e.g. NGOs, government, or academia) regarding the societal value 'health' does reflect morality, while asking for feedback other firms does not directly relate to morality. Similarly, Non-commercial Value Reflexivity – like Value Articulation – has a positive and strong relation with RRI Performance Scores at firm level but not in Perceived RRI Performance at employee level, while Commercial Value Reflexivity does not have a strong correlation with either measure. The lack of convergent and concurrent validity could be explained by the over-reliance on institutionalized knowledge that this stakeholder engagement represents (Zietsma et al., 2002), thereby bringing less new insights on morality and societal values. Although these results need to be confirmed by future studies, this outcome could indicate limitations to the ability of industry to self-regulate the response to societal values and thus act upon grand societal challenges. Especially in the case that self-regulation initiatives are governed solely by industry representatives and do not include other non-commercial organizations, there is a high risk of normative myopia (Swanson, 1999) and thus a lack of input for reconfigurations of values practices (Gehman et al., 2013).

Second, the both Value Reflexivity instruments emphasizes on the search for feedback, but items 24 and 25 developed to measure the firm's intention to adjust its practices to the feedback did not load on the factors of these instruments. Although this exclusion could be related to the phrasing of these particular items, another explanation is that if a firm has the capacity to search for feedback from stakeholders does not mean that it also has the intention to continuously adjust its practices accordingly (Ortiz-de-Mandojana &

Bansal, 2016). However, as our instrument contained only two items related to this intention, our dataset provides insufficient ground to develop a separate instrument for this possibly additional dimension. To capture the complexity of such responsiveness, a possible avenue is to develop items based upon the strategies for dealing with ambidexterity, as described by Hahn et al. (2016).

#### 4.5.4 The VAC framework: its contribution and next steps

In exploring the capabilities required to make innovation outcomes more socially responsible, our study confirms what AC frameworks emphasize: a firm needs both internally and externally focused capabilities to innovate (W. M. Cohen & Levinthal, 1990; Zahra & George, 2002). However, these practices within the VAC-dimensions are not the same as mentioned in AC literature. First, the support for the validity of the Value Receptivity and Value Articulation indicates that consciously discussing the meaning of a societal value and setting objectives for this particular value within the firm are capabilities relevant for socially responsible behavior, as previously theorized (Dignum et al., 2015; Gehman et al., 2013; Nissenbaum, 2005; Stilgoe et al., 2013). These capabilities go beyond absorption of the latest technological knowledge, which the majority of the AC scholars emphasize (Lane et al., 2006; Volberda et al., 2010). Second, the lack of convergent and concurrent validity of the Commercial Value Reflexivity scale in our study indicates that commercial parties might not be the most relevant dialogue partners to stimulate socially responsible innovation and allows us to question whether this dimension should be included in the Value-sensitive Absorptive Capacity framework. Furthermore, the supporting evidence for the validity of Non-commercial Commercial Value Reflexivity indicates that for RRI the stakeholder engagement capabilities needs to go beyond inter-firm relationships that AC and OI frameworks have traditionally focused on (Huizingh, 2011; Long & Blok, 2018).

When interpreting the outcomes presented above, we do want to remind our readers that the objective of this paper is to present the initial step in exploring the VAC framework in practice. We, thereby, acknowledge that further validation exercises are required to establish the VAC dimensions as proposed. Our sample size and the specificity of our context is appropriate for this first exploration, but future studies with larger sample sizes and in other contexts – e.g. other industries and/or other societal values – are required to establish the validity of the VAC framework and its scales and to be able to generalize their applicability to other instances of socially responsible behavior. Also, our results show that the content validity of each VAC dimension requires further assessment. Finally, although our results on the concurrent validity of the VAC dimensions look

promising, the relationships between the VAC-dimensions and the RRI outcomes should further investigated, ideally with data that allows to assess the predictive validity of the scales (Cronbach & Meehl, 1955). Especially considering how value conflicts are specific to a societal value and the firm practice (Dignum et al., 2015), we suggest future research to use RRI outcome measures that are specific to the societal value under investigation and focus on actual outcomes of commercial innovation, such as the products and services provided by the firm. Only with such indicators, the actual impact of a firm's behavior on society can be measured and the influence of 'greenwashing' or policy-practice decoupling on the variables can be minimized (Crilly et al., 2012; Hahn et al., 2016).

Nonetheless, this paper provides a valuable contribution to existing discourse on the social responsibilities of firms and how they act upon them through innovation. By presenting the VAC framework, we expose the intra-organizational challenges of RRI and provide a theoretical base to investigate how firms can link their product innovation to the grand societal challenges. Thereby, we aim to further strengthen the connections between the RRI, CSR and knowledge management literature, showing their complementarities and bridging gaps created by conceptual dissonance. Like we did for the scale of motives for CSR by Paulraj et al. (2017), we thus invite scholars of both fields to assess the validity of our framework and scales in further empirical studies in other industries with other innovation strategies.

## Chapter 5.

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### CHANGING THE RULES OF THE GAME: HOW REVISING CSR STANDARDS MIGHT OR MIGHT NOT SUPPORT THEIR LONG-TERM EFFECTIVENESS

#### Abstract

In order for Corporate Social Responsibility (CSR) standards to promote socially responsible behavior in industry, they need endure over the long-term by responding to the dynamics of society. Revisions of their content are thus necessary to maintain both their input legitimacy – the socially constructed norms are accepted as fair and effective by society – and their output legitimacy – the extent to which standards are actually able to standardize the behavior of its adopters. By studying the effects of the standards underlying a front-of-pack label indicating the healthiness of food products, our study shows that a) making CSR standards more aligned with the views of civil society can increase the average social value created, but that b) de-certifications of products due to stricter standards demotivates firms to invest in enhancing compliance. The article concludes that revisions of CSR standards can only improve both types of legitimacy if the subsequent changes in firm behavior are visible and transparently reported by the standardization organization.



## 5.1 Introduction

The potential of Corporate Social Responsibility (CSR) standards to promote socially responsible behavior in industry has been argued from several theoretical perspectives. CSR standards are voluntary rules, formally authored by societal actors, to stimulate socially responsible behavior of firms (Brunsson, Rasche, & Seidl, 2012; Fransen & Kolk, 2007; Rasche, de Bakker, & Moon, 2013). From a political CSR perspective, standards are argued to re-balance power between governments and firms and to fill the regulatory voids caused by globalization or local politics (Fransen & Kolk, 2007; Scherer & Palazzo, 2011; Scherer, Rasche, Palazzo, & Spicer, 2016). Other scholars argue from an organizational legitimacy perspective that standards can make the social and environmental performance of firms visible and thus a source of competitive advantage through positively influencing purchase behavior and reputation and ultimately supporting a firm's legitimacy (Slager, Gond, & Moon, 2012; Suchman, 1995; Wijen, 2014). A final perspective comes from the Responsible Research and Innovation (RRI) field, which indicates that standards a) are vehicles for opening up (commercial) innovation processes, b) accommodate broader ethical reflection in firms on the purpose of their innovation activities; c) assist them in translating moral values and uncertainty within the innovation outcomes (Guston, 2008; Stilgoe et al., 2013).

The popularity of CSR standards is not only shown by this multitude of arguments for their utility in the scientific fields, but also by their still increasing number of applications in practice – from product-level labels such as from the Forest Stewardship Council, the Marine Stewardship Council and Fair Trade Organization, to the firm-level certification schemes such as the ISO 14000 for environmental management and the Global Reporting Initiative (Rasche et al., 2013). Despite their popularity and the numerous articles written on their underlying mechanisms, CSR standards and their related standardization organizations still struggle to ensure their long-term endurance and effectiveness needed to become the golden standard for firm behavior (Scherer et al., 2016). The long-term endurance and effectiveness of CSR standards is dependent on their ability to adjust to new insights and changes in the environment (Brunsson et al., 2012; Wijen, 2014). By revising their standards standardization organization can manage their input legitimacy based on the societal acceptance of their procedures and the content of the standards and their output legitimacy based on the firm adoption rate of their standards (Botzem & Dobusch, 2012; Brunsson et al., 2012).

In conceptual papers, input and output legitimacy are often portrayed as reinforcing each other in which a higher level of input legitimacy is theorized to increase societal pressure

for participation or compliance (Fransen & Kolk, 2007), and a higher level of output legitimacy is theorized to increase chances that the objectives of the stakeholders are actually achieved (Botzem & Dobusch, 2012). However, scholars have also indicated instances in which these two types of legitimacy conflict with each other, especially during standards' revision (Hülse & Kerwer, 2007; Mena & Palazzo, 2012). For example, Slager et al. (2012) indicate that standards' revision is 'risky' as a change that supports one type of legitimacy might undermine the other type of legitimacy. In empirical research, however, the two types of legitimacy are often investigated separately (Tuczek, Castka, & Wakolbinger, 2018). Due to these separate investigations, the intricate relationship between input and output legitimacy are often neglected in empirical studies. This article aims at filling this research gap by presenting an empirical study on the effect of standards' revision on input and output legitimacy of CSR standards. Therefore, we first synthesize the literature on how standards' revisions impact input and output legitimacy. Then our case study regarding a healthy food product label is presented, which provides the background on which the hypotheses were developed, and the two types of legitimacy were operationalized. By analyzing multi-level, quantitative data collected of product certification over the ten years of the food label's existence, we show the effects of a revision of the standards on their input and output legitimacy.

The main result of our study is that when the revisions of standards supported the societal goals of the standards and thus their input legitimacy, these same revisions led to a decrease in compliance and thus in their output legitimacy. Likewise, when the revisions supported compliance by making the standards less strict and easier to implement, no advancement on the societal goals and thus input legitimacy was observed. Thereby, although previous empirical studies have provided valuable insights on the separate mechanisms of input and output legitimacy, our study indicates that the long-term endurance and effectiveness of standards can only be investigated when both types of legitimacy are taken into account simultaneously. The results of this study – and hopefully future studies – can provide insights on how to balance input and output legitimacy in standards' revisions and support CSR standards in their objective to make socially responsible behavior the standard behavior of firms.

## 5.2 Background and literature review

Although standards come in many shapes and sizes, three elements distinguish them from other rules or norms, captured by the definition of Brunsson et al. (2012, p. 616): “A standard can be defined as a rule for common and voluntary use, decided by one or several people or organizations”. The first element is that standards are for common use,

meaning that multiple organizations or individuals can implement them. Although some standards are set up for specific industries, products or processes, they still apply to other organizations than the organization that created them and thus cross organizational boundaries (Brunsson et al., 2012). The second element is their voluntary status. Standards do not have formal power of enforcement as the standardizer does not have the right to force others into standard adoption (Brunsson et al., 2012; Rasche et al., 2013). The third element is the formal authorship. Although standards are mechanisms of social order and – in case of CSR standards – can reflect “globally valid conceptions of virtuous behavior and morality” (Haack, Schoeneborn, & Wickert, 2012, p. 818), they differ from norms as they are the result of a deliberate decision by individuals or organizations while norms result from repeated patterns of social interaction (Rasche et al., 2013; Sandholtz, 2012).

Another characteristic of standards is that they are dynamic. Although standards are mainly implemented to provide order in a complex and opaque world, they are not to be seen as stable entities (Brunsson et al., 2012; Wijen, 2014). One of the main elements of standardization to be changed over time is the content of the standards themselves. Egyedi & Blind (2008) define three strategies for revision: a) grafting in which the new standards are based upon the prior standards but improve them; b) extending, in which the new standards add features to the prior standards; c) revolution, in which the new standards are radically different than the prior standards. The revision of standards is, however, a delicate process, because adjustments to the standards can have different effects on input and output legitimacy, as scholars have previously theorized. In the following sections we provide a synthesis of the literature on these effects of standard adjustment on input and output legitimacy, respectively.

### 5.2.1 Changes in standards for input legitimacy

Input legitimacy is based upon the process of devising the standards in “that those subject to international regulatory standards have participated in some meaningful way in their development” (Alexander, Dhumale, & Eatwell, 2005, p. 15), also referred to as ‘rule credibility’ (Mena & Palazzo, 2012). By highlighting both the inclusivity and the fairness of the process, the concept of input legitimacy covers also the aspects of procedural legitimacy (Botzem & Dobusch, 2012; Mayntz, 2010). Input legitimacy thus emphasizes the social and political nature of standardization, defining the socially constructed norms and definitions to which corporate behavior is judged (Suchman, 1995, p. 574).

In case of standards for social value, multi-stakeholder participation in standard-setting platforms is generally indicated as supporting input legitimacy. Fransen & Kolk (2007) stipulate three reasons: a) inclusiveness in decision making leads to higher levels of authority and the perception of good governance; b) critical actors can perform the ‘watchdog’ function and the standards thus satisfy a larger critical mass; c) different actors bring different expertise that allows standard-setting to account for a broader perspective on cause-effect relationships of standards and thus their effectiveness. This multitude of stakeholders’ views will also increase the likelihood that the standards need to be revised over time. First, the standards’ progress towards the intended impact will be monitored by multiple eyes, leading to more suggestions for improvements to increase this progress (Fransen & Kolk, 2007; Slager et al., 2012). Second, the consequences of implementation cannot be perfectly predicted as society itself is also not static and factors external to the standardization program might affect progress on the intended impact. These changes might impact the views of the stakeholders over the effectiveness of the standards and thus raise requests for standards’ revision (Brunsson et al., 2012; Ferraro et al., 2015).

As vested interests and influences make standard-setting platforms complex political playgrounds, managing the standard-setting process efficiently and fair is one of the most daunting tasks of the standardization organization (Brunsson et al., 2012). However, scholars have recently observed another requirement for input legitimacy that makes this process even more complicated: the participants of standard-setting platforms should also alternate over time. Even if experts are selected for their impartiality, their relationships with market actors or interest groups might color their views (Timmermans & Epstein, 2010). As Crilly et al. (2016) showed, non-market stakeholders that have a closer relationship with a firm are more prone to justify misdeeds of that firm and to (unintentionally) ignore dissonant information. This bias is not only caused by previous collaborations between actors but can also be caused by the frequent and lasting interactions between actors during the standard-setting process itself, allowing naivety and favoritism (Brunsson et al., 2012; Crilly et al., 2016). Such (perceived) favoritism might discourage other stakeholders – who value their impartiality – to participate in standard-setting, as participation might be perceived as tacit endorsement or aiding potential greenwashing (Blok, 2014; Crilly et al., 2016; Lyon & Montgomery, 2015). Alternating participants of the standard-setting platforms might help overcome this bias.

Additionally, changing the constituency of the standard-setting platform can help the standardization organization to guard itself from taking over the standard-setting process. As the standardization organization accumulates more insights about the standards over time, its expertise increases, resulting in higher autonomy and power. Its staff and close affiliates might thus be tempted to overpower the participants instead of moderating them (Hallström & Boström, 2010, p. 116). New participants might be better able to signal such dynamics and challenge the standardization organization on its position in the standard-setting process. A final reason for inviting new participants to the standard-setting process is that standard implementation might have unforeseen consequences which require other stakeholders to be involved (Ferraro et al., 2015; Wijen, 2014). No matter the reason for involving new participants, their introduction will often bring new views and expertise to the table, leading to the need to revise the standards (Brunsson et al., 2012).

### 5.2.2 Changes in standards for output legitimacy

Output legitimacy concerns the extent to which standards are actually able to standardize the behavior of its adopters “is therefore predominantly related to its diffusion” (Botzem & Dobusch, 2012, p. 741). Wider and deeper diffusion increases the reach and effectiveness of the standards. Especially in the case where there are multiple competing standards, their adoption rate determines whether they are regarded as legitimate standardizers or as ‘paper tigers’ (Timmermans & Epstein, 2010). The diffusion of standards is determined by the number of firms adopting the standards and the level of compliance to the standards within the firms (Botzem & Dobusch, 2012; Wijen, 2014). Adjusting the standards in order to increase firm participation and improve firm compliance will thus contribute to the output legitimacy of standards.

Both adoption of and compliance to standards is dependent on the assessment by a firm whether the costs outweigh the benefits. The result of this assessment might lead to adoption but not automatically leads to compliance, as several studies have shown (Baumann-Pauly, Wickert, Spence, & Scherer, 2013; Hanseth & Bygstad, 2015; Sandholtz, 2012; Vigneau, Humphreys, & Moon, 2015; Wijen, 2014). Adoption often brings limited costs and predictable benefits – e.g. paying a membership fees will make you eligible for known member benefits – compliance always requires some level of adaptation of firm practices of which costs can be considerable (Haack et al., 2012; Wijen, 2014). Furthermore, the benefits of compliance can be invisible or uncertain. In cases of high levels of behavioral invisibility – meaning “the inability to readily observe and assess the behavior of [the standardized] actors” (Wijen, 2014, p. 307) – decreasing compliance

will not decrease the benefits to the firm as their disobedience to the standards cannot be observed. When the higher management consciously decides to have a low level of compliance, scholars refer to the firm's behavior as 'ceremonial conformity' (Haack et al., 2012, p. 816), 'opportunistic adoption' (Wijen, 2014, p. 307), or 'calculated deception' by higher management (Crilly et al., 2012, p. 1429).

The uncertainty of the benefits of standard compliance is caused by the ability of the firm to implement the adaptations as intended and the unpredictability of whether the adaptations will bring the intended benefits. When the behavior of employees does not meet the levels of compliance aimed for by higher management, scholars often refer to it as policy-practice decoupling (Crilly et al., 2012). The implementation is dependent on whether lower management and employees responsible for the adaptations also assess the benefits as outweighing the costs. For example, a case study of two business units in one firm adopting the same ISO quality standards, showed how pressure of customers was perceived by one business unit as an important benefit of standard adoption and led to high compliance, while the other department was driven by pressure of higher management, perceived as internal politics without clear benefit, led to lower compliance and eventually abandoning the standards (Sandholtz, 2012).

Another type of decoupling is related to the second source of uncertainty: do the adaptations actually provide the intended benefits for the firm and society (Crilly et al., 2016). This means-end decoupling can be caused by a lack of knowledge about cause-effect relationships within the firm (Wijen, 2014). Due to this lack of knowledge firms are not able to choose between the multitude of practices that are available for achieving the intended benefits and might choose the 'wrong' practice (Wijen, 2014). The lack of knowledge is not always created by ignorance from the firm's side, but the complexity of grand challenges can also create a general uncertainty in society about cause-effect relationships (Crilly et al., 2016; Ferraro et al., 2015). A final source of means-end decoupling is a narrow definition of the end goal caused by uniformity in the background of managers responsible for compliance (Sandholtz, 2012; Vigneau et al., 2015). For example, in a case study of the implementation of the Global Reporting Initiative, Vigneau et al. (2015) observed that the professional background of a firm's CSR managers (communication and public affairs) directed the CSR-activities towards improvement of retrospective reporting and not to self-reflection on and proactive responsiveness by the firm's operations as intended by the GRI standards.

As already indicated by Botzem & Dobusch (2012), standard-setting and standard diffusion are reciprocally linked, as the content of the standards (partly) determine the costs and benefits. The perceived costs and benefits can be identified through evaluation of the implementation and consequences of the standards with the employees of the firms, both current participants as well as potential new participants (Hanseth & Bygstad, 2015; Slager et al., 2012; Wijen, 2014). Insights from these evaluations can be used to revise the standards, for example by making them less ambitious to reduce the costs of implementation, including measurable targets to compare firms on their compliance and increase visibility of the benefits, and specifying the standards to include ‘best practices’ and clarification on the means-end relationships. However, revisions to increase participation and compliance for some firms could have a backlash on both input legitimacy and the compliance of other firms.

### 5.3 Development of hypotheses

Based on the literature described above, we have developed a set of hypotheses regarding the effect of standards’ revision on input and output legitimacy.

First, to maintain input legitimacy, standards need to be revised to respond to changes in the views of stakeholders about the effectiveness of the standards (Brunsson et al., 2012; Ferraro et al., 2015). In case of CSR standards, the effectiveness of the standards is dependent on the social value they create. With regard to stimulating and monitoring social value creation, the relevance of civil society and in particular NGOs has seen to be increased over the years (Kourula & Laasonen, 2010). The role of civil society is indicated by CSR scholars as the *cultural carriers* of virtuous behavior and morality (Haack et al., 2012), or as the *watchdogs* of corporate social behavior (Fransen & Kolk, 2007). Therefore, we hypothesize that when standards’ revisions are aligned with the views of these stakeholders, more social value is created by the standards, which is positive for their input legitimacy. Therefore, the following hypothesis will be tested in our analysis:

*H1: When the revisions of standards are aligned with the views of civil society organizations more social value is created – supporting the input legitimacy of the standards – compared to when the revisions of standards are not aligned with the views of civil society.*

Second, the effect of standards’ revision on output legitimacy is dependent on how the cost-benefit balance for firms is affected (Botzem & Dobusch, 2012). One of the main manners in which standards’ revision has an influence on this balance is through the achievability of the standards: increasing the achievability will decrease the cost of

compliance (Wijen, 2014). When after revision the standards are more achievable and thus the cost of compliance decreases, the level of compliance is likely to increase. When after revision the new standards are less achievable and the cost of compliance increases, firms will only make this extra investment and maintain their level of compliance if non-compliance decreases their benefits. We, therefore, hypothesize the following:

*H2a: When the standards' revision increases the achievability of the standards, the compliance level of firms increases.*

*H2b: When the standards' revision decreases the achievability of the standards but by lowering compliance levels firms fear their benefits will decrease, firms will invest and maintain their level of compliance.*

## 5.4 Method

### 5.4.1 Case description

To investigate the effect of standards' revision on input and output legitimacy, we use data from the Dutch Choices Program (Choices), a self-regulation program of the food firms active in the Dutch market.<sup>5</sup> In acting upon the long-term health effects of food products, standardization is very common in the food industry, as shown by the long list of policy initiatives published by the NOURISHING program (World Cancer Research Fund International, 2013). Previous studies on the effectiveness of these standards have been undertaken (Buttriss, 2013; Knai et al., 2015; Sharma, Teret, & Brownell, 2010; Trieu et al., 2015), but the wide variety of standardization practices available – e.g. pledges for healthier products, industry-wide nutrition targets, front-of-pack health labels – clouds clear conclusions and thus confuses policy-makers. It is therefore of utmost importance that we clearly outline the characteristics of the standards analyzed in our study. The case description below is based on conversations with staff members of Choices, the website and other documentation of Choices, and publications in general and trade-specific media, retrieved through Nexis Uni® (LexisNexis, 2017). In Appendix D, an overview of the standards of Choices can be found.

Choices was initiated in a period when several other initiatives to standardize the nutritional composition of food products were launched in the Dutch market, allowing us to observe some effects of competition between standards on the output legitimacy (Brunsson et al., 2012; Reinecke, Manning, & von Hagen, 2012; Wijen, 2014). In Sep-

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<sup>5</sup> Besides the Dutch program, the International Choices Foundation has also been implemented similar programs in Belgium, Czech Republic and Poland. This case study is focused only on the program activities in the Dutch market.



tember 2005 the largest Dutch retailer Albert Heijn launched a front-of-pack health logo ‘the Clover’ for their private label (Diepenbrock, 2005). Partly in response to this logo and to government recommendations for self-regulation by the food industry, the Federation Dutch Food Industry (FNLI) started negotiations among their members regarding a similar general health logo but as their members did not agree on the necessity and feasibility of such a logo decided launch an energy-logo instead in February 2006 (Trouw Economy editors, 2006; VMT Editors, 2006). Three multinational food manufacturers that were part of these discussions – Unilever and the dairy producers Friesland Foods and Campina (which merged into FrieslandCampina in 2008) – did, however, see the necessity of a general health logo and launched their own initiative in May 2006: Choices logo, coordination by the Choices Foundation (the Foundation) (Scholtens, 2006).

The Choices logo was a front-of-pack health label signaling the products that complied with nutritional standards specified per product category (e.g. bread, dairy, vegetables). As membership of Choices was voluntary for firms, its certification standards were formally authored by a Scientific Committee and the standards were available for common use, Choices can be classified as *de jure* standards according to Brunsson et al. (2012). As they standardize the products composition of food firms in relation to the products’ contribution to consumer health, the Choices standards can be seen as non-technical, outcome standards (Brunsson et al., 2012). The Choices standards were revised three times: in 2007, 2010 and 2015. The Scientific Committee consisted of researchers from academia and government institutes (Dutch Choices Foundation, 2018b). As Choices was a self-regulation initiative, active involvement of other stakeholders was limited. The Ministry of Health endorsed Choices but chose not to be involved in decision making, with the exception of the advisory role in the Board and Scientific Committee. NGOs related to health or consumer rights were consulted but were not involved in decision making and did not have official advisory roles. Although after the merger Choices was the only health-related front-of-pack logo allowed on food products in the Netherlands, its legitimacy was challenged increasingly by these non-commercial actors over the years. In the tenth year of Choices’ existence, the Dutch Consumer Association launched a campaign calling out to the Dutch government to stop endorsing Choices and its logo. Although as a response Choices organized a public debate and several stakeholder roundtables in the spring of 2016 to improve their input legitimacy, the Ministry of Health officially retracted its support in October 2016 (Schipper, 2017). The Choices Foundation was officially liquidated in October 2018 when the logo was no longer allowed to be used on food packaging (Dutch Choices Foundation, 2018a).

5.4.2 Sample and hierarchical structure

To test the hypotheses, a sample was taken from the product certification data collected by Choices from their members from 2006 to 2016. This data consisted only of products that were certified by food manufacturers and retailers, as the caterers had a separate certification system for their products and meals. Furthermore, the data of the largest retailer was not included, as they were allowed to share their product data directly with the external auditor without intercession by the Foundation. Additionally, the products in the dataset had all undergone some level of processing since unprocessed products, such as fresh produce, did not require official certification. In case certified products were taken off the market, the member firms were encouraged to remove these products from the Choices system, but this removal was not actively monitored. Consequently, the date marking removal from the database was missing for a large number of products that were no longer on the market. Furthermore, reformulations were inconsistently archived and thus the research team could not with certainty distinguish reformulations and new products. These missing and unreliable data impaired the possibility to follow each product in time and observing changes on a product level. Therefore, the research team decided to note each product and reformulation as a new observation and focus the analysis on the number of new certifications under each standards version. As each firm had the opportunity to certify multiple products in multiple product categories, the structure of our dataset was hierarchical with at level one the product, level two the product category and level three the firm. Figure 5.1 provides an illustrative overview of the hierarchical structure of our dataset.

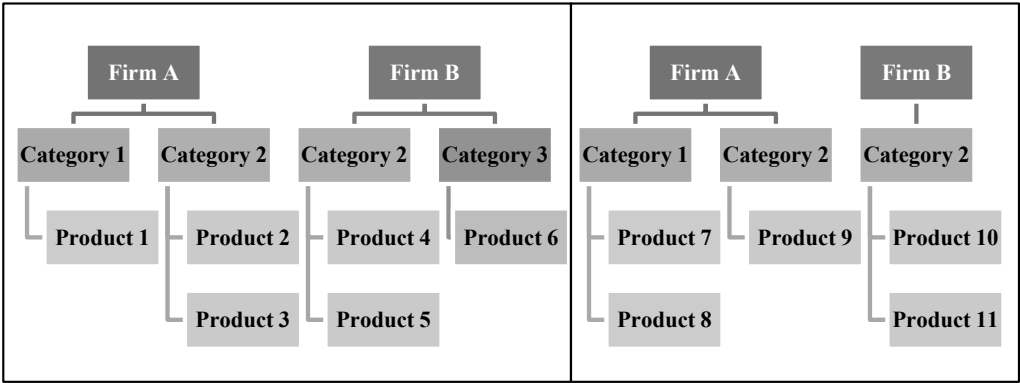


Figure 5.1. Illustration of hierarchical structure.

To analyze the effect of standards’ revision, the products certified under the 2007 standards were compared to the products certified under the 2010 standards. The 2006 standards were only valid for 18 months. Similarly, the certification period of the 2015

standards was cut short by the discontinuation of the standards. The number of products certified under these standards were not comparable to the 2007 and 2010 periods and the products certified under this standards version were left out of the analysis.

For testing hypothesis 1, the sample entailed all products certified in 2007 and 2010, consisting of 3780 products from 95 firms in 22 product categories. For testing hypotheses 2, this dataset was aggregated to firm level. To prevent this dataset being distorted by cancellations of firm membership, only the firms that were member under the 2010 standards were selected, resulting in 69 firms in 22 product categories and thus 178 observations – i.e. firm-product category combinations – as several firms were active in more than one product category. The outlier analysis was conducted separately for each sample.

### 5.4.3 Variables

To test the hypotheses, two analyses were conducted with each different set of variables. In Table 5.1 the operational definitions and the hierarchical level of all variables can be found. In Table 5.2 the descriptive statistics of variables are outlined per analysis (excluding outliers).

#### *Dependent variables: Nutrition Score and product count 2010*

To determine the impact of standards' revisions on the legitimacy of these standards, the legitimacy of the standards in our case needs to be measured.

Measuring input legitimacy is complicated as the literature has – as far as we know – not specified quantitative indicators of input legitimacy for retrospective data. The aspects of procedural legitimacy are hard to quantify, and retrospective views on legitimacy are prone to recall bias. However, another aspect of input legitimacy can be measured retrospectively: whether standards were able to create social value (Fransen & Kolk, 2007). The main purpose of the Choices standards was to stimulate healthier product development and thereby to make the food offered to the Dutch consumer healthier. The social value created by the standards is thus determined by the healthiness of the products certified with the logo. To determine the relative healthiness of the certified products, a Nutrition Score was calculated per product. First, the relative level of nutrient  $k_n$  of product  $p$  was calculated by subtracting the level  $x$  of nutrient  $k_n$  of product  $p$  from the average level of nutrient  $k_n$  in product category  $j$ .

$$\overline{x_{k_n j}} - x_{k_n p}$$

Then this score was standardized (i.e. z-score) by overall average of nutrient  $k_n$  for all products.

$$(\overline{x_{k_nj}} - x_{k_np}) - \overline{x_{k_n}}$$

The z-scores for all nutrients ( $k_1, k_2, \dots, k_n$ ) for product  $p$  (that are relevant for category  $j$ ) were then summed up to get one score for the nutrition composition of product  $p$ .

$$NS_p = \sum_{i=1}^n ((\overline{x_{k_{ij}}} - x_{k_ip}) - \overline{x_{k_i}})$$

To illustrate, a hypothetical snack product  $p$  contains 380 mg/100g of sodium ( $x_{k_{np}}$ ). The average sodium level for the product category ( $j$ ) *snacks* is 72.13 mg/100g ( $\overline{x_{k_{nj}}}$ ), making the relative level of the product  $p$  -307.87 mg/100g.<sup>6</sup> Comparing score with the relative sodium levels of all products provides the product  $p$  with a z-score of approximately -2.85 for sodium. The same score is calculated for added sugar, saturated fat and trans-fat levels of product  $p$ . In the product category *snacks*, the fiber content is not part of the nutrition criteria and thus this z-score excluded from the z-scores for product  $p$ . By summing up all relevant nutrition scores, a final Nutrition Score is calculated for product  $p$  ( $NS_p$ ). As a result, a positive NS is interpreted as a healthier than average product and a negative NS is a less healthy than average product.

To determine the impact of standards' revisions on the output legitimacy of our case, we focus on the level of compliance by the Choices member firms. Although many studies have shown discrepancies between adoption of standards and compliance (Baumann-Pauly et al., 2013; Hanseth & Bygstad, 2015; Sandholtz, 2012; Vigneau et al., 2015; Wijen, 2014), the majority of the studies on the impact of standards report adoption as a binary indicator and do not detail the level of compliance (Haack et al., 2012; Manders, de Vries, & Blind, 2016) and do not take into account the possibility of firms decoupling (Wijen, 2014). Therefore, in our study compliance is measured as a continuous variable: the number of products certified per firm per category under the 2010 standards (Product count 2010, PC10).

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<sup>6</sup> The relative level of fiber was calculated the opposite way (product level – category level), because fiber is considered a beneficial nutrient: a fiber level higher than the average is considered positive and is reflected by a positive z-score.

**Table 5.1.** Operational definitions of variables

<i>Name</i>	<i>Hierarchical level</i>	<i>Abbrev.</i>	<i>Description</i>
<b><i>Dependent variables</i></b>			
<i>Nutrition Score</i>	Product	NS	A relative score per product, comparing its product composition to the other products in the dataset, used as an indicator for compliance (the higher the score, the healthier the product)
<i>Product count 2010</i>	Firm	PC10	The number of products certified under the 2010 standards in category k by firm j*
<b><i>Independent variables</i></b>			
<i>Strictness revision</i>	Product category	STR	Indicator of whether in 2010 the standards of product category k became stricter (-1 = less strict, 0 = equal, 1 = stricter)
<i>Submission period</i>	Product	PER	Indicator of under which standard version the product was certified (-1 = 2007; 1 = 2010)
<i>Products de-certified</i>	Firm	DEC	The number of products that were de-certified under the 2010 standards in category k by firm j*
<b><i>Control variables</i></b>			
<i>Firm type</i>	Firm	FTYP	Categorical variable for firm j indicating both firm size (large, medium or small revenue in the Dutch market) and value chain position (i.e. producer or retailer)
<i>Product count 2007</i>	Firm	PC07	The number of products certified under the 2007 standards in category k by firm j*
<i>New firm</i>	Firm	NewF	Indicator of whether firm j became a new member after the 2010 standards were introduced or not (0 = not new member; 1 = new member)

\*An overview of the 22 product categories (k) can be found in Appendix D.

### *Independent variables: type of standards' revision*

With its standards' revisions clearly marked, Choices provides the perfect case to investigate the impact of such revisions on input and output legitimacy. As indicated in the sample description, our study focuses on the standards' revisions in 2010. The type of the revisions differed per product category, providing us with a comparison of the conditions mentioned in hypothesis 1: alignment with civil society organizations. Analyzing the articles in media outlets from 2006 until 2016 – retrieved through Nexis Uni® (LexisNexis, 2017) – civil society organizations continuously requested the standards to be more selective, certifying only the healthiest products. To comply with this request, the standards thus needed to become stricter over time.

Although the overall aim of the standards' revisions of 2010 was to make the standards stricter, in several product categories the standards became less strict. The main reason for this discrepancy was because the standardization organization learned that the standards in 2007 for these product categories were too ambitious and were barriers for new entrants and higher compliance. To determine for which product categories the standards became stricter, the standards of 2007 and 2010 were to be compared for each product category. Since the standards of several product categories changed in nutritional indicator (e.g. from grams/100kcal to grams/100grams) the strictness of the 2010 standards (STR) was determined by comparing all 4146 products in the database to both the 2007 and 2010 standards in their respective product category. When more products in a product category complied to 2007 than to 2010, the 2010 standards of that category were stricter (label: 1). When an equal number of products complied to the 2007 and 2010 standards, the standards were equal (label: 0). When less products complied with 2007 standards compared to 2010 standards, the product category had less strict standards in 2010 (label: -1). In total, eleven categories were stricter, three categories stayed equal, and eight categories were less strict in 2010. To measure the impact of the standards' revision on the Nutrition Score, the products received a code for the standard set under which they were certified (PER;  $-1 = 2007$  and  $1 = 2010$ ). By including an interaction between PER and STR in the analysis, the effect of the standards' revision on changes in Nutrition Score from 2007 to 2010 was analyzed.

For hypothesis 2b, the costs and benefits of compliance for each firm need to be measured. The actual cost of compliance could not be accurately estimated due to the large number of factors influencing this factor. Instead we selected the number of potentially de-certified products due to the standards' revision. After each revision of the standards in 2010, the member firms were allowed approximately one year to adjust the products that did not comply with the new standards. If products were not compliant after this year, the product was de-certified and firm needed to remove the logo of the package before the one-year-period was over (Dutch Choices Foundation, 2010, 2015), which would decrease their consumer exposure and benefits of participation. To prevent de-certification and preventing decreasing benefits of participation, these firms thus needed to reformulate these products to meet the new standards.<sup>7</sup> Firms with a high

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<sup>7</sup> For example, the 2010 standards allowed a maximum amount of 2.5 g/100g sugar in the product category 'meal sauces' compared to the 2007 maximum amount of 3.25 g/100g. If the product of a firm contained 3 g/100g sugar, the firm needs to reformulate its product by finding a sugar replacement to maintain flavor. However, the replacement ingredient will likely have a different molecular structure and thus the firm requires to find new ways of processing to maintain other product characteristics like structural consistency or food safety features.

number of potentially de-certified products will thus have a higher cost for maintaining their compliance levels than firms with a low number or no potentially de-certified products. To test hypothesis 2b, the number of de-certified products (DEC) was calculated for each firm-product category combination by comparing the products certified under the 2007 standards with the 2010 standards and counting up the products that did not comply with the 2010 standards. After reformulation was successful, the product needed to be re-certified, which appeared as a new data entry in our dataset. These re-certifications would be added to the number of new certifications of the firm, meaning when compliance levels are maintained the overall certification rate of the firms with de-certified products should be higher or at least similar to firms with no de-certified products.

### *Control variables*

For both of the analyses, several control variables were taken up. First, as the firms that were member of the standards differed between the periods of 2007 and 2010, the firm level characteristics might influence the variance between the two periods. The firm's size influences the size of its R&D budget and thus the resources it has available to respond to change (Wijen, 2014). As a majority of the firms in the dataset were privately owned and thus did not publicly disclose financial information, public data could not be used to determine revenue streams. Instead the categories of the Choices' membership fees paid by the firms were used to determine the size of the firm. These categories were dependent on the revenues of the firm in the Dutch market and whether the firm was classified as a manufacturer or retailer. The following categories were used for variable Firm Type (FTYP) in the analysis: a) Large retailer (>3 billion); b) Medium retailer (1-3 billion); c) Small retailer (<1 billion); d) Large producer (revenues >150 million); e) Medium producer (20-150 million); f) Small producer (<20 million). For the analysis concerning PC10, the categories "Small retailer" and "Medium retailer" were left out of the analysis as the sample contained no small or medium retailers that certified products in the same product categories for both 2007 and 2010.

Second, the impact of a potential de-certification on the firm's behavior is relative to the overall number of products certified. For example, the threat of de-certification of one product is likely to be experienced as more severe to a firm with only two products certified than for a firm with thirty products certified. Therefore, the number of products certified under the 2007 standards (PC07) and the interaction between this variable and the number of de-certified products (PC07\*DEC) is taken up as a control variable in the second analysis.

**Table 5.2.** Descriptive statistics of variables per analysis (without outliers).

<i>Name</i>	<i>Hierarchical level</i>	<i>Type of variable</i>	<i>Count of observations</i>	<i>Mean</i>	<i>SD</i>	<i>Range</i>
<b>Analysis 1</b>						
<b>(Unit of analysis: products, n = 3815)</b>						
<i>Nutrition Score</i>	Product	Continuous	3780	0.024★	0.448	3.732
<i>Submission period</i>	Product	Binary -1 = 2007 1 = 2010	1870 1910			
<i>Strictness standards</i>	Product	Categorical -1 = less strict 0 = equal 1 = stricter	864 128 2788			
<i>Firm type</i>	Firm	Categorical L producer M producer S producer L retailer M retailer S retailer	1168 (30.9%) 523 (13.8%) 654 (17.3%) 1301 (34.4%) 84 (2.2%) 50 (1.3%)			
<b>Analysis 2</b>						
<b>(Unit of analysis: firm-category combinations, n = 178)</b>						
<i>Product Count 2007</i>	Firm	Continuous	178	10.42	22.00	251
<i>Product Count 2010</i>	Firm	Continuous	178	9.43	23.00	262
<i>Products De-certified</i>	Firm	Continuous	178	1.17	3.01	24
<i>Strictness standards</i>	Product	Categorical -1 = less strict 0 = equal 1 = stricter	49 (27.5%) 19 (10.7%) 110 (61.8%)			
<i>New firm</i>	Firm	Binary 0 = member before 2010 1 = member after 2010	148 (83.1%) 30 (16.9%)			
<i>Firm type</i>	Firm	Categorical L producer M producer S producer L retailer	23 (12.9%) 31 (17.4%) 85 (47.8%) 39 (21.9%)			

★ The mean of NS is not 0, since the product scores are the sum of independently calculated z-scores.

Third and last, in the second analysis a dichotomous variable (NewF) was used to indicate whether firms had only products certified under the 2010 standards and could thus be considered new members of the standards. When a firm becomes a member of the standards, its product certification rate will be high as a result of the inventory it conducts



of its whole portfolio to identify compliant products. By including this variable, any variance in the 2010 product certification rates caused by the initial certification waves of these firms is controlled for.

#### 5.4.4 Plan of analyses

After initial exploration of both datasets, the software SPSS version 23 was used to conduct both analyses (IBM Corp., 2015). A multilevel linear model with random intercepts for both the firm and the product category was prepared for both analyses, which is commonly used methodology to capture the hierarchical relationships between the variables (Field, 2013)<sup>8</sup>. For the first analysis, we used the following model

$$Y_{ij} = \beta_{0jk} + \beta_1 X_{ijk} + \varepsilon_{ijk}$$

$$\text{with } \beta_{0jk} = \beta_0 + u_{0j} + u_{0k}$$

where  $Y_{ij}$  is the value of the dependent variable (see section 3.2.1) for product  $i$  of firm  $j$  in product category  $k$ ;  $\beta_{0jk}$  is the intercept of firm  $j$  in product category  $k$  which is composed of  $\beta_0$  as the intercept for the whole model,  $u_{0j}$  as the variability of the intercept of firm  $j$  and  $u_{0k}$  as the variability of the intercept of product category  $k$ ;  $\beta_1$  is the effect of predictor  $X$  (see section 3.2.2) for product  $i$  in firm  $j$ , and  $\varepsilon_{ij}$  is the firm's product random effect (individual error term).

In the second analysis, we used a similar model only replacing product  $i$  with firm-product category combination  $l$ :

$$Y_{lj} = \beta_{0jk} + \beta_1 X_{ljk} + \varepsilon_{ljk}$$

$$\text{with } \beta_{0jk} = \beta_0 + u_{0j} + u_{0k}$$

Before analyzing the relationships between the variables, the model with random intercepts needs to be assessed on its fit to the data, which requires a chi-square likelihood ratio test (similar as used in logistic regression) (Field, 2013). In our study, the deviance statistic Akaike's Information Criterion (AIC) is used to compare the model with a random intercept to a model with a fixed intercept (fixed  $\beta_0$  without effects of  $u_{0j}$  and  $u_{0k}$ ). This AIC statistic is similar to the deviance log-likelihood (-2LL) used in logistic regression, as it indicates the amount of unexplained information after the model was fitted: a lower AIC means a better fitting model. Unlike the -2LL, the AIC corrects for

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<sup>8</sup> For examples of other studies using multilevel analyses on hierarchical data, see Halilem et al. (2017), Tojeiro-Rivero & Moreno (2019) and Zhang et al. (2013).

the number of parameters estimated (Field, 2013; Leyland, 2004). To build up the best-fitting model, we first fitted the fixed intercept model adding one by one the independent variables and using the AIC to assess the fit of each model. Then the multilevel model was assessed, starting with adding the random intercept for the product categories  $k$  and then adding the random intercept of firms  $j$ . These two models were compared on their AIC to the fixed intercept model and each other to determine the best fitting models.

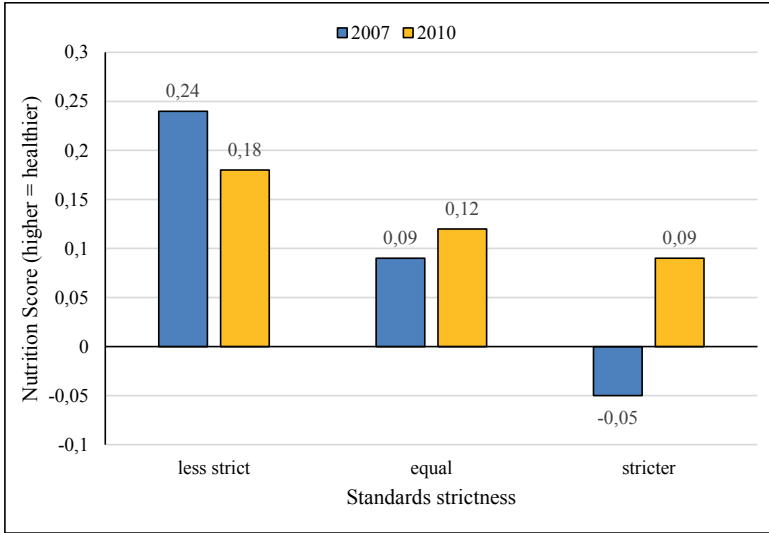
To comply with assumptions of linear models, several measures were taken. For the first analyses, the unequal distribution of products across firms (largest contributor = 803 products; smallest contributor = 1 product) was remedied by weighting NS of each product according to the number of observations per firm. Furthermore, to remedy the high level of kurtosis for NS, the analyses using NS were bootstrapped with 1000 sample, stratified per firm to maintain the structure of the original dataset in the samples. The analyses using product count as dependent variables were also bootstrapped with 1000 samples to correct for any violations of assumptions due to the smaller sample size. In both analyses, extreme outliers ( $>3$  SD, analysis 1 = 74 observations, analysis 2 = 6 observations) were removed from the analyses as they were identified as influential cases.

## 5.5 Results

Regarding legitimacy of our case, the case description already showed that the investigated standards lost their legitimacy over time, which eventually lead to their discontinuance. In our study, however, we investigate what the effect of the standards' revision was on their legitimacy. In the next sections we present thus the effects of the standards' revision in 2010 on the Nutrition Score representing social value creation and thus the input legitimacy, and on the Product Count in 2010 representing compliance and thus output legitimacy.

### 5.5.1 Results on Nutrition Score

Figure 5.2 provides several insights in the changes of the average Nutrition Score over time per strictness category (contributions of firms are weighted). First, the products in the product categories of which the standards became stricter start with a lower average Nutrition Score than the categories that became less strict or stayed equal and are thus unhealthier. Second, for the stricter and equal standards the Nutrition Score increased when comparing products certified under the 2007 standards to certified under the 2010 standards, while under the less strict standards the Nutrition Score decreased and thus the products became unhealthier on average.



**Figure 5.2.** Overview of the average Nutrition Score for each strictness category for products certified under 2007 standards and products certified under 2010 standards (without outliers, with weighting per firm)

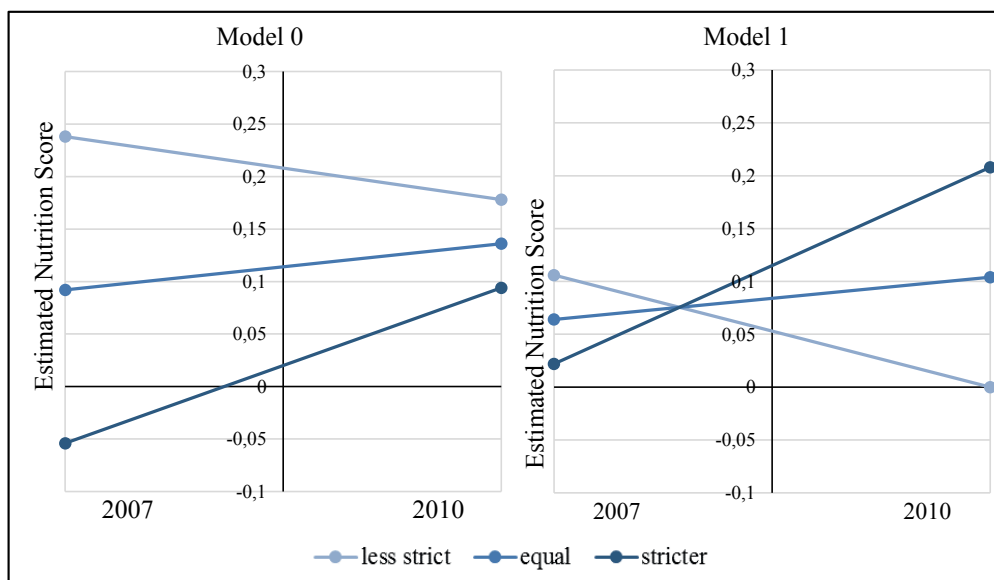
The results of the multi-level model can be used to determine how much of this change in Nutrition Score can actually be ascribed to the strictness of the standards. As expected, Table 5.3 and Figure 5.3 show that the null model without the random intercepts show the same dynamics in Nutrition Scores as depicted in Figure 5.2. In model 1 the random intercepts are added per firm and per product category, removing the variance determined by differences between periods in the firms that were active and the product categories to which products were added. The relationship between the Nutrition Score and the dependent variables showed significant variance ( $X^2(2) = 3314, p < 0.01$ ) across product categories (Variance  $u_{0k} = 0.048, p < 0.01$ ) and across firms (Variance  $u_{0j} = 0.198, p < 0.01$ ). The amount of variance explained by product categories was 13.6 percent, while the between firm differences explained 56.3 percent. The small percentage explained by product categories can, however, be attributed to the fact that between category differences were taken up in the calculation of Nutrition Score, thus decreasing the variance explained by this indicator. Furthermore, comparison between the null model with model 1 shows that by removing the variance explained by firms and product categories, the effect of PER on Nutrition Score remains similar ( $\beta = 0.02$ ), the effect of STR becomes positive ( $\beta = 0.031$ ), and positive effect of the interaction between CRIT and STR becomes stronger ( $\beta = 0.073$ ).

**Table 5.3.** Results of the multilevel analysis for Nutrition Score (NS)

<i>Variables</i>	<i>Model 0</i>	<i>Model 1</i>	<i>Model 2</i>
<b>Random intercepts*</b>			
<i>Residual</i>	NA	0.106 (.001)	0.103 (.001)
<i>Product category</i>	NA	0.048 (.001)	0.077 (.001)
<i>Firm</i>	NA	0.198 (.001)	0.206 (.001)
<b>Fixed predictors**</b>			
<i>INTERCEPT</i>	0.114 (.000)	0.084 (.001)	-0.132 (.001)
<i>Submission period (PER)</i>	0.022 (.000)	0.020 (.001)	0.184 (.001)
<i>Strictness standards (STR)</i>	-0.094 (.000)	0.031 (.001)	0.169 (.001)
<i>Interaction PER x STR</i>	0.052 (.000)	0.073 (.001)	0.062 (.001)
<i>Firm type (FTYP)</i>			(.001)
<i>Interaction FTYP x PER</i>			(.001)
<i>Interaction FTYP x STR</i>			(.001)
<i>Interaction FTYP x PER x STR</i>			(.001)

\*Variance in intercepts indicated with in parentheses the significance of this variance.

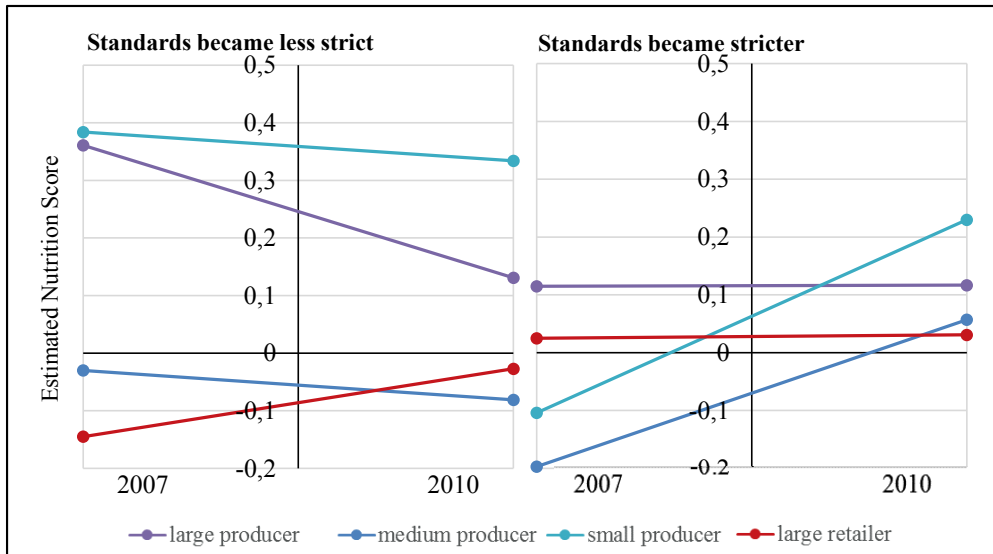
\*\*Estimate for covariance indicated with in parentheses the significance of this covariance



**Figure 5.3.** Illustration of effect STR on Nutrition Score based on model 0 with fixed intercepts and model 1 with random intercepts for Firm and Product category (variances of  $u_{0k}$  and  $u_{0j}$  are not displayed).

Figure 5.3 shows that because the strength of the interaction effect is larger than the strength of the PER and STR individually, the slope for each of the STR categories becomes steeper in model 1. As indicated in the method section, standards' revisions that led to stricter standards were aligned with the views of civil society. Furthermore, an increase in Nutrition Score indicates relatively healthier products and thus higher social value creation. Thus, the positive slope of the stricter standards (coefficient = 0.186) and the negative slope of the less strict standards (coefficient = -0.106) indicates that

hypothesis 1 would be accepted. However, when adding the control variable Firm Type (FTYP) to our model (see Table 3, model 2), the effect of FTYP and its interactions with the other variables PER and STR are significant, which indicates that relationship between STR\*PER and NS differs per firm type. Figure 5.4 shows that when the standards become less strict, the Nutrition Score of the producers became less healthy (slope = -0.05 to -0.23) while the Nutrition Score of the large retailers became healthier (slope = 0.12). Second, when the standards became stricter, the medium-sized producers (coefficient = 0.254) and the small producers (coefficient = 0.334) showed a large increase in Nutrition Score, while the large producers (coefficient = 0.002) and large retailers (coefficient = 0.006) showed almost no change in Nutrition Score. As the results for the small and medium-sized retailers are based on a very limited number of observations, their effects are not depicted. Therefore, hypothesis 1 cannot be accepted in the case of large producers and large retailers.

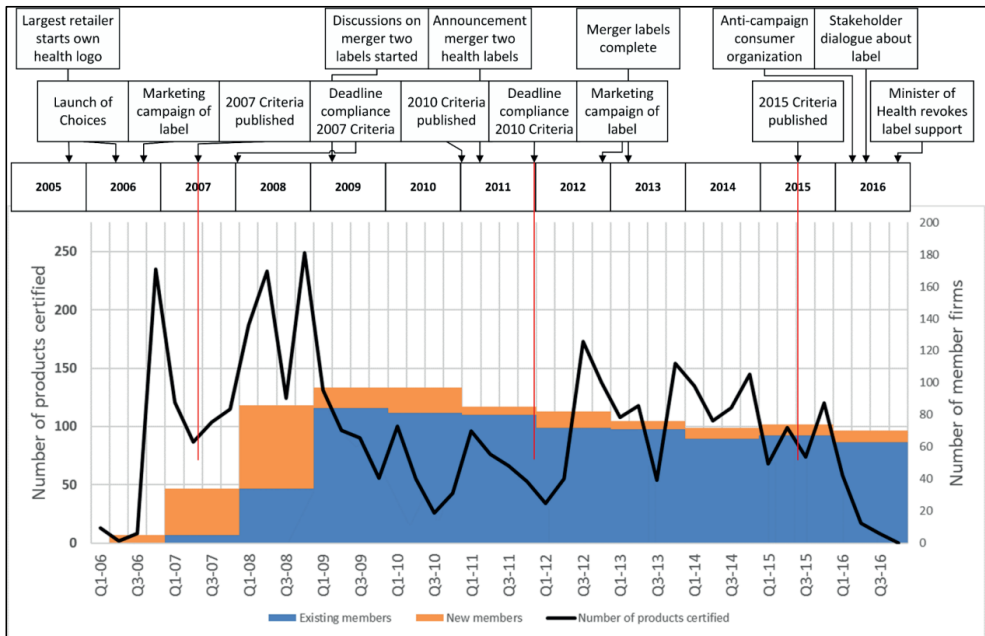


**Figure 5.4.** Illustration of effects of STR on Nutrition Score per firm type (based on model 2, random intercepts for firm and product category not displayed).

### 5.5.2 Results on Product Count 2010

Before the multi-level analysis on Product Count 2010 was conducted, the overall membership and certification rates were explored to get a global overview of the output legitimacy of the standards over time. As can be seen in Figure 5.5, the activities of the initial members can be observed as the first certification peak in the end of 2006. The biggest increases in membership can be observed in 2007 and 2008, followed by two peaks in the certification rates in 2008. After 2008 a period of low certification rates starts,

which coincides with negotiations regarding the merger of the two logos. In the same period, the membership rates no longer increased and slightly declined each year after 2010. Coinciding with the announcement of the new standards in 2010 a small certification peak can be observed and in the third quarter of 2012 the certification rate observes another peak. Since that peak, certification remained a higher rate – besides quarterly fluctuations – until the beginning of 2016 when public debate on the standards and their legitimacy initiated.



**Figure 5.5.** Timeline of events during existence of Choices with the black line indicating the number of new products certified per quarter (excluding products from caterers and largest retailer) and the bars indicating the number of member firms per year (blue = existing members, orange = new members).

To test hypothesis 2a and 2b, an analysis on firm level was conducted to investigate whether the fluctuations in product certification rate was explained by increasing cost of compliance due to the standards’ revisions. Although initially a multilevel model was run to explain changes the Product Count under the 2010 standards (PC10), the analyses showed that the random intercepts of both product category and firm did not explain a significant amount of variance. This result indicates that the number of products certified in 2010 by a firm in a product category, is not explained by an overall firm effect or by an overall category effect. Therefore, Table 4 shows the results of two models without random intercepts. As the intercept is negative in both models, PC10 is overall significantly lower than PC07. This result is to be expected, as PC07 includes the

certifications resulting the review of the whole product portfolio at the initiation of the firm membership and subsequently PC10 only includes new product developments. This influence of the initial certification is confirmed by the significant and positive effect of the variable NewF on PC10, indicating that product certification rates under the 2010 standards were significantly higher for firms that became member after 2010 than rates of existing members.

First, the overall effect of the standards' revision was analyzed in model 1. The STR variable showed a negative but not significant effect on PC10 (-0.824,  $p = 0.348$ ). This result indicates that the achievability of standards by itself (i.e. less strict, equal or stricter) did not significantly affect the number of products certified by a firm under the 2010 standards. Therefore, hypothesis 2a should be rejected.

Second, model 2 shows a significant, but negative effect of DEC on PC10 (-1.050,  $p < .001$ ). The negative effect indicates that when a firm has a high number of (potentially) de-certified products in a particular product category, the decrease in certification rate is further amplified leading to an even lower number of certifications under the 2010 standards in that category. Since reformulation leads to re-certifications and these re-certifications are added up to the certification rate under the 2010 standards, reformulation as a response to potential de-certification should have a positive effect on the certification rate under the 2010 criteria. This negative effect thus shows that (potential) de-certification did not lead firms to invest more to maintain their compliance levels and leads us to reject hypothesis 2b.

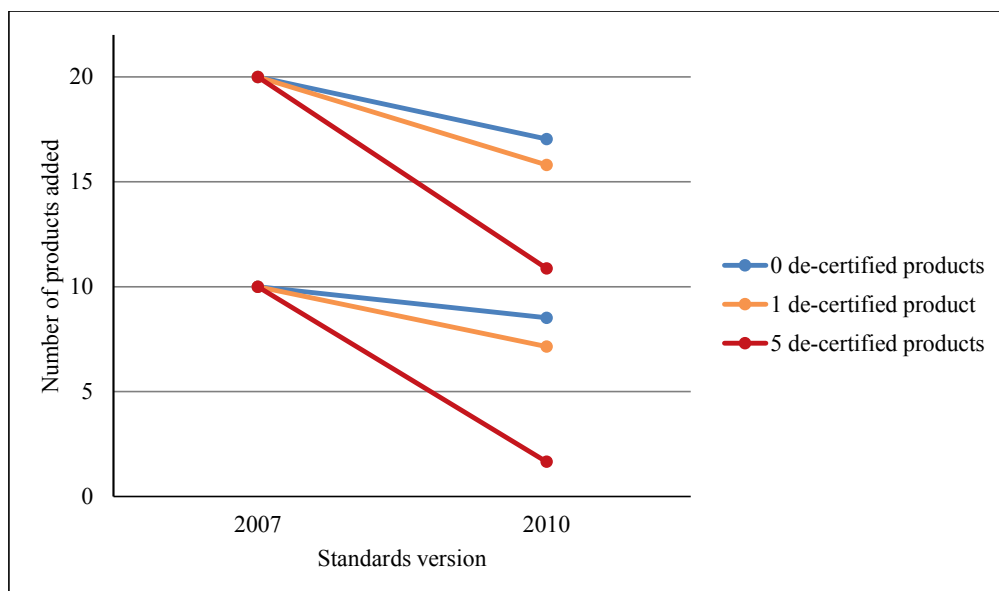
**Table 5.4.** Results multilevel analysis: Product Count 2010 (PC10) as dependent variable

<i>Variables</i>	<i>Model 1</i>	<i>Model 2</i>
<i>Intercept</i>	4.076 (.030)	7.078 (.385)
<i>Product count 2007 (PC07)</i>	0.992 (<.001)	0.852 (<.001)
<i>Firm type (FTYPE)</i>	(<.001)	(<.001)
<i>New Firm (NewF)</i>	5.376 (.004)	3.723 (.031)
<i>Strictness standards (STR)</i>	-1.022 (0.178)	
<i>Products de-certified (DEC)</i>		-1.513 (<.001)
<i>Interaction PC07*DEC</i>		0.014 (<.001)

Estimate for covariance indicated with in parentheses the p-value of this covariance

Concerning the control variables, PC07 has a positive and significant effect in both models, indicating that when a firm certified more products under the 2007 standards it would also certify more products under the 2010 standards. Additionally, since the significant interaction effect between PC07 and DEC is also smaller than 1.0, their interaction amplifies the negative slope. Therefore, PC10 is lower for firms with a high PC07 and high DEC. With regard to the effect of FTYP, the models show on the one

hand that PC10 significantly differs per firm type. On the other hand, the interaction between FTYP and DEC did not significantly explain PC10 (not shown in table). In Figure 5.6 the relationships indicated by model 2 are illustrated. As a result of the overall decrease in certification rate, the effects of the other independent variables are shown as a more or less negative slope between PC07 and PC10.



**Figure 5.6.** Illustration of relationships as indicated in model 2, showing that the overall decrease in certified products from 2007 to 2010 is amplified by the number of products potentially de-certified due to the standards' revisions (effects of FTYP and NewF not displayed).

## 5.6 Discussion

As standards require to act within a dynamic environment, regular evaluation and revision of their content is crucial for their legitimacy (Brunsson et al., 2012; Durand & McGuire, 2005). The act of revising standards is, however, not without risk and is theorized to potentially damage the legitimacy of the standards (Slager et al., 2012). In our study we thus investigated the effects of standards' revisions on both the input and output legitimacy of the standards themselves.

### 5.6.1 Effects of standards' revision on input legitimacy

Input legitimacy requires the content of CSR standards to comply with the views of the different stakeholders on how firms should create social value (Botzem & Dobusch, 2012; Fransen & Kolk, 2007). Our study shows that when the standards' revision is in line with the views of civil society (i.e. the standards became stricter) there is an increase in the amount of social value created (i.e. average Nutrition Score increases). In addition, the



results show that the opposite is also true: when the revision was not in line with the views of civil society (i.e. standards became less strict), social value creation decreased (i.e. average Nutrition Score decreased). As the creation of social value is one of the conditions of input legitimacy of CSR standards, standards' revisions could thus influence this legitimacy.

This conclusion comes, however, with two conditions. First, the changes in social value creation is only an indirect measure of input legitimacy. To have an effect on the actual input legitimacy of the standards, civil society and other societal actors need to be informed about the changes in social value creation in order to allow them to adjust their views on the standards (Botzem & Dobusch, 2012; Brunsson et al., 2012). Furthermore, the input legitimacy of standards is also determined by the views of the stakeholders on the fairness of the revision procedure (Botzem & Dobusch, 2012; Mayntz, 2010). In our study we looked at the effects of standards' revisions in hindsight and the results of our analysis were only available after the standards of our case were discontinued. We were not able to measure the changes in stakeholder views over time nor did we have data on the perceived procedural fairness. A fruitful avenue for future research would thus be to investigate within an active standards program how the communication of standards' revision and its impact on social value creation would affect the views of civil society and thus input legitimacy directly.

Second, the total social value created is still dependent on the responses of the standardized firms and in revising the standards their existing level of social value creation should be taken into account. As Wijen (2014) indicated that the response of a firm is determined by their perceived benefits and costs, our results suggest that the total social value created is subject to the 'law of diminishing returns'. In cases where the standards became stricter large producers and large retailers showed no improvement in Nutrition Score. Looking at their average Nutrition Score in 2007 this is, however, not surprising: as their average social value created in 2007 was the highest in these product categories, they had less to gain in increasing this value even further. The opposite but similar effect can be seen in the product categories where the standards became less strict: the large retailers had the lowest Nutrition Score in 2007 and thus showed an increase in average social value created while all other firm types showed a decrease. In these product categories the retailers had thus a lot to gain by improving their social value creation, even when the standards' revision did not give them reason to. This firm behavior will impact the total social value created by the standards, which both researchers investigating standards and policy makers implementing standards should take into consideration.

### 5.6.2 Effects of standards' revision on output legitimacy

In discussing participation and compliance – the two main components of output legitimacy – scholars have stressed the importance of achievability and whether the benefits of compliance live up to the cost of the required adaptations (Sandholtz, 2012; Wijen, 2014). Our study showed for compliance the achievability of standards did not have a direct impact, i.e. making the standards less strict did not lead to more compliance and making them stricter did not lead to less compliance. However, an indirect influence of standards' revision on compliance was observed through its effects on the cost-benefit balance, although not in the way we hypothesized. While a higher number of (potential) de-certified products was hypothesized to increase compliance by threatening the benefits of standard membership, our results showed that higher de-certification rates led to lower compliance rates.

Looking at the cost-benefit balance, there are two ways to explain this unexpected effect. First, in developing the hypothesis we might have underestimated the cost of reformulation and the ability of food firms to invest in maintaining their compliance. As indicated by Wijen (2014), the availability of resources is crucial in decision making on cost and benefits of standards. In the last decade, a series of so-called 'price wars' between the Dutch supermarkets chains have shrunked the margins in the Dutch food industry (Pinckaers, 2016; Schelfaut, 2019), decreasing the room for additional investment in product reformulation. That these lower margins have affected all parties in the food industry might explain why for this de-certification effect no significant differences between firm types were found. This result suggests that even when standards' revision threatens firms with de-certification, industry-level competition might make it too risky for firms to invest in higher compliance.

However, the lack of increase in compliance when the standards became more achievable and thus compliance less costly, questions whether costs are not the main driver for compliance. Our second explanation of the unexpected lower compliance is thus related to the benefits of compliance. In developing our hypothesis, we assumed that de-certification poses a threat on the firm's benefits of compliance, but we might have overestimated this threat. Regarding benefits acquired through sales, de-certification was assumed lead to less positive exposure of the firm's product to the consumer. However, looking back at our interviews, multiple firms indicated that the effect of certification on their sales was minimal and thus that the threat of de-certification of a product did not always stimulate them to reformulate. Second, multiple scholars have stressed the importance of behavioral visibility of standardized firms in order to prevent low

compliance and opportunistic behavior (Crilly et al., 2012; Haack et al., 2012; Wijen, 2014). In our hypothesis, we assumed that de-certification at product level was visible enough to threaten the firm's reputation, motivating them to invest in reformulation. Looking closer at the characteristics of the case, this reputation effect might have been less strong. Since the standards organization did not sanction de-certification nor did it communicate the compliance levels of its members to the public, stakeholders needed to track the compliance at product level to account for opportunistic behavior. Besides the huge efforts required to track up to 7000 certified products, stakeholders also faced distortions in the de-certification signal due to the fact that products of non-members did not carry the logo. Consequently, in order to observe de-certification of a product, a stakeholder needed to know 1) whether the product had a logo before; 2) which firm produced the product<sup>9</sup>; and 3) whether this firm was a member or not. De-certification and low compliance of member firms was, therefore, practically invisible for other stakeholders. Due to this invisibility, coercive pressure for higher compliance normally exerted by civil society or government (Hahn & Albert, 2017; Kourula & Laasonen, 2010; Kourula, Moon, Salles-Djelic, & Wickert, 2019), was disabled and the mimetic pressure between firms was fully dependent on the firms' own monitoring and thus less strong (Heras-Saizarbitoria & Boiral, 2013).

Building on our results, we thus theorize that a positive effect of standards' revision on output legitimacy through compliance is conditional to either or both of the following factors: a) enough resources within the industry to cover the costs of (increased) compliance; b) visibility of non-compliant behavior to threaten the benefits of compliance through reputation or sales.

### 5.6.3 The complex relationship between input and output legitimacy

The unique contribution of this study results from analyzing the effect of standards' revisions on both types of legitimacy at the same time. Although Botzem & Dobusch (2012) indicate a reinforcing relationship between input and output legitimacy of standards, the results of our empirical analysis show that utilizing this relationship and pursuing both types of legitimacy with revisions of standards is highly complex. Making the standards more ambitious is shown by our study to increase the average social value created by the standards, which can improve input legitimacy. However, this higher level of ambition leads to higher costs for compliance for certain firms (due to de-certifications)

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<sup>9</sup> In the food market the connection between brand and firm is not always clear due to subsidiary-constructions, mergers and brand-changes.

and consequently these firms lowered their compliance level, decreasing the standards' output legitimacy. Whether this lowering of compliance is caused by the firms being unable (or (un)willing) to invest or by the invisibility of their benefits of compliance, without high compliance levels the total social value created by the standards will decrease, leading to detrimental effects on the input legitimacy. Furthermore, our case also shows that maintaining stable compliance levels and revising the standards to increase social value creation in some product categories is not enough for standards to maintain their input legitimacy. In the end, the standards' revisions conducted in our case did not convince civil society and other societal actors of the effectiveness of the standards, and in the end the standards were discontinued. The emphasis on output legitimacy by studies on standards – as indicated in the review by Tuczek et al (2018) – might thus be a reflection of the ease of measuring participation and compliance rates compared to input legitimacy, instead of their superior relevance in the long-term endurance of standards, as Botzem & Dobusch (2012) previously claimed.

Besides showing the complexity of the relationship between standards' revisions and standards' legitimacy, our study also shows that one factor is crucial in increasing both types of legitimacy for CSR standards: the behavioral visibility. For input legitimacy it is important to convince societal actors of the standards' effectiveness in creating social value and that can only be achieved if the standardization organization transparently reports on their effectiveness in standardizing firm behavior. To gain trust of the societal actors the organization should not only communicate about their positive impact, but also report on their challenges in establishing ambitious standards while simultaneously increasing participation and compliance. Additionally, reporting transparently on the (non-)compliant behavior of the member firms allows both coercive pressure from stakeholders as well as mimetic pressure between firms, which are needed to increase the participation and compliance rates and thus output legitimacy of standards. The main drawback, however, is that transparently reporting firm compliance by the standardizing organization will likely scare off new participants if these firms are not (yet) able to reach the same compliance levels as already existing participants. When not participating, these firms run less risk that their non-compliant behavior will become visible. To counter this situation, the coercive pressure should always be higher on firms not yet participating than on participating firms with low compliance. Drawing upon our results and observations in our case study, we propose that only with the commitment to transparency from the standardization organization and the pressure by societal actors on firms to participate, can CSR standards endure in the long-term and make socially responsible behavior the standard in industry.

## Chapter 6.

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### CONCLUSION & DISCUSSION

## 6.1 Aim and objectives of this dissertation

The main aim of this dissertation was to explore how the elements of innovation management theory should be redirected to ensure that commercial innovation processes incorporate societal values and create social value. To limit the scope of my research, three elements of innovation management were selected and taken up in the three objectives of this dissertation:

- 1) identify and classify the motives of firms to create social value through their product innovations;
- 2) identify organizational capabilities required by firms to absorb societal values in innovation processes;
- 3) determine the role of external standards for stimulating social value creation through innovation.

In the next section, I will outline how the chapters of this dissertation have contributed to the achievement of each of the objectives.

## 6.2 Conclusions and reflections per objective

### 6.2.1 Objective 1: identifying and classifying motives for innovation

The first element of innovation management theory explored in this dissertation were the motives of firms for innovation. As indicated in chapter two, the reason why a firm incorporates a societal value such as ‘health’ in its innovation determines how the organization organizes its innovation processes and responds to the views of its stakeholders (Bansal, 2003). Therefore, the motives for innovation are important to take into consideration when aiming to redirect innovation management towards social value creation. The multiple case study in chapter two leads to several interesting findings on these motives, such as the observation that relational motives are derivatives of instrumental and moral motives and that moral and instrumental motives for socially responsible innovation outcomes were observed to be simultaneously present in all firms. However, in this section I would like to reflect upon the implications of one observation related to the difference in innovation behavior. In firms where the moral motives were more pronounced, the societal value ‘health’ were observed to be also more consistently taken up in the product innovation process. The firms with more pronounced instrumental reasons were observed to integrate the societal value ‘health’ more at an ad hoc basis.

Besides the implications of these observations as provided in chapter two, I would like to provide a possible explanation of how these two types of motives determine a firm's decision to innovate to overcome inter-value conflicts and support consumers in situations of moral overload. To illustrate, I will use three food-related health norms: low in trans-fat, gluten-free and low in sodium.

When a firm is driven by instrumental motives, it will decide on the relevance of a health norm by assessing the impact of the norm on its own survival. There several ways in which a norm can be instrumental. The trans-fat norm is included in regulation (European Commission, 2019) and in exceeding the set maximum levels, firms risk sanctions in the shape of fines or lawsuits.<sup>10</sup> The costs of sanctions will justify investment in innovation to overcome inter-value conflicts between this health norm and norms that determine purchase behavior (such as flavor). Since competitors also need to invest in this innovation, there is no risk of them gaining competitive advantage over this health norm. Furthermore, since the trans-fat norm is formalized, it will less likely be subject of conflicts between societal actors, so there is little risk of societal backlash due to intra-value conflicts.

In the case of the gluten-free norm, firms are instrumentally motivated by market demand. The maximum levels of gluten are not formally regulated, but a specific group of consumers is willing to pay a premium price for products complying with this norm. Instrumentally motivated firms will invest in innovation to overcome inter-value conflicts related to this norm when the sales predictions are large to cover the costs. These innovation efforts could lead the firm to trade off other health norms that do not increase sales – as shown in a recent study (Calvo-Lerma et al., 2019). Since these decisions are consumer driven, these firms do not need for a critical mass in society to support a norm and will easily accept a new health norm if enough consumers show interest. For the gluten-free norm, there is no agreement between societal actors on whether this norm contributes to health – except for 1% of the population that is diagnosed with gluten-intolerance. Firms investing in this norm will risk being accused of 'consumer deception' by some societal actors, especially if they are trading off other health norms to do so.

However, when the criticism does not lead to sales decreases or government sanctions, its impact is too small for firms to act. Due to the possible trade-offs between health

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<sup>10</sup> In case of trans fats, the EU regulated its maximum limit officially only in April 2019. However, in the years before, regulations in several EU member states, recommendations from the EU Commission and lawsuits in other countries showed food firms that there was a high risk for future sanctions. This example shows that the norm does not yet have to be formalized in law to stimulate action, as long as there are clear signs that the norm will be formalized in the near future.

norms and volatility of consumer interest, the definition of ‘health’ in these instrumentally motivated firms change at a rapid pace.

When there is no regulation or market demand for a health norm, instrumental motives for investing in the norm are harder to find. Low in sodium could be seen as one of those norms. Although there are industry-agreements on the lowering of sodium levels in most sectors of the food industry, these agreements do not have sanctioning power and thus do not threaten the firm with costs for non-compliance. As long as these soft laws are perceived effective enough in lowering sodium levels, government is less likely to replace them with hard laws and subsequent sanctions (Reeve & Magnusson, 2015). Additionally, while consumers know that high sodium consumption is harmful for their health, the norm is not prioritized in their purchase behavior or they are not willing or able to pay a premium price. Without monetary incentive to overcome inter-value conflicts to realize this norm, the instrumentally motivated firm will not invest in innovation related to this norm, even though there is little to no risk for intra-value conflict between actors. The agreement between societal actors is actually used by civil society to put pressure on the food firms, but as long as their competitors have similar sodium levels there is little risk that reputation damage will disadvantage a firm’s market share.

When a firm is morally motivated, their decision-making process will likely be different in regard to the latter two norms. The investment in the norms will depend on whether ‘it is the right thing to do’ which is in this case determined by whether acting on the norm will provide considerable public health benefits and whether not acting on the norm will cause harm. For the low in sodium norm, the public health benefit is agreed by all societal actors, evidenced by its inclusion in national nutrition guidelines. Without intra-value conflicts, morally motivated actors will invest in lowering sodium levels. For the gluten-free norm, the public health benefit is disputed. The morally motivated firm might act upon this norm if the 1% of the population that medically requires these products is perceived to be underserved, but only if in making these gluten-free products other health norms are not compromised. Therefore, the definition of health in these morally motivated firms is comprised of a core set of health norms, which is only extended if there is a general consensus in society on the relevance of a new health norm.

The innovation efforts of these morally motivated firms are, however, limited by their overall profitability and their freedom to invest their profit into innovation. For example, competitors can decide to use their profits to drive down the price to gain a larger market share. The morally motivated firm will be forced to join to defend its market position,



which will reduce their profit margins and thus their ability to innovate in for example lower sodium levels.

In conclusion and reflecting observations in our study, I propose that more instrumentally motivated firm will invest in solving inter-value conflicts to support consumers in situations of moral overload, but only if there are regulatory sanctions or market demand that could lead to a competitive advantage. The intra-value conflicts are likely to have little impact on this decision. More morally motivated firms will likely invest in solving inter-value conflicts to support consumers in situations of moral overload, if there is little to no intra-value conflict between societal actors regarding the norm and if the firm has enough resources to invest in innovation. Therefore, the innovation investment in a value such as 'health' and the selection of norms to innovate upon are expected to be more stable over time in morally motivated firms than in instrumentally motivated firms.

Thereby, with these insights the first objective of this dissertation is achieved – identify and classify the motives of firms to create social value through their product innovations, although the exact mechanisms of their influence that are described here need further empirical substantiation. The achievement of this objective also provides a part of the answer to the main research question: *How should commercial innovation management be redirected towards social value creation?* By proposing a limited role for instrumental motives – which were seen the main drivers for decision making in traditional innovation management – in social value creation through innovation and proposing to focus investigations in motives for innovation on the moral motives of a firm. Nevertheless, the innovation efforts of a firm are not only determined by its motives. To act upon moral motives and create social value through innovation, firms will need to broaden the value system on which its product innovation is based. This broadening requires organizational capabilities for absorbing societal values. The results of investigations in these capabilities is discussed in the next section.

### 6.2.2 Objective 2: identify organizational capabilities

In identifying the capabilities required to absorb societal values for innovation, several streams of literature have been consulted, as shown in chapter three. Corporate Social Responsibility (CSR) scholars have provided some indications of corporate actions for acting upon societal values and for creating social value (e.g. Athanasopoulou & Selsky, 2015; Gehman et al., 2013; Hahn et al., 2014; Plambeck & Weber, 2009; Swanson, 1999), but their interconnections and relations to organizational capabilities were missing. The organizational capabilities identified by innovation scholars (e.g. Teece, 2009; Zahra & George, 2002), on the other hand, do not discuss societal values or social value

creation. The RRI scholars have suggested both practices and capabilities related to societal values integration in design (B. Friedman et al., 2002; Van de Poel, 2013), but have not linked them to organizational capabilities of firms. The studies presented in the chapters three and four take the first steps towards a common framework of organizational capabilities required by firms to absorb societal values in innovation processes, fulfilling objective two of this dissertation.

This development was initiated by the multiple case-study in chapter three on the product innovation processes of eight food firms, which resulted in the Value-sensitive Absorptive Capacity (VAC) framework. The analysis of recurring behavioral responses of the firms towards intra- and inter-value conflicts led to the identification of the three VAC dimensions – a) Value Receptivity; b) Value Articulation; and c) Value Reflexivity – and a set of aspects to distinguish firms within each dimension. In chapter four, the VAC framework is further empirically investigated by translating the dimensions into a survey instrument and making initial explorations of its validity. In this section, I will combine the insights of both studies and elaborate on each of the three dimensions of the framework.

First, based on the study in chapter three, Value Receptivity was defined as “the firm’s ability to understand a societal value” in which a firm’s understanding of a value was categorized as either broad or narrow. The results of the survey study in chapter four suggest to further refine this dimension to the activities related to internal dialogue on the meaning of health and how it relates to the objectives of the firm. This dimension shows resemblance to the internal philosophical exploration described in the VSD literature (Nissenbaum, 2005), but it is distinct from the ‘normative receptivity’ described by Swanson (1999), as she explains this receptivity as the perception of an individual executive instead of an organization.

Second, the Value Articulation definition proposed in study was as follows “the firm’s ability to communicate a societal value within its organization” in which firms could be distinguished on the consistency of this communication and on whether or not the firm accepted deviations from the value. The activities that resulted from the survey in chapter four indicate that communication between departments on design requirements regarding the value is a large part of this dimension, in which gaining knowledge from outside sources on these requirements was also supportive. The acceptance of deviations was only covered indirectly in one item, as the other items proposed to measure to organizational response to deviations had to be excluded based on their results. Although this exclusion could be related to the phrasing of these particular survey items, another

line of inquiry would be to instead investigate the strategies accepted within a firm in dealing with an inter-value conflict, especially when resources for innovation are restricted. Thereby, the theories on moral overload could provide interesting insights (see Van den Hoven et al., 2012) as well as the paradox theories on the behavior of managers when faced with tensions between the multiple objectives of the firm (see Hahn et al., 2014).

Third, Value Reflexivity was defined in chapter 3 as “the firm’s ability to evaluate its role in acting upon a societal value and respond to divergent insights by adjusting its practices” in which we observed responsive and defensive behavior in firms. The results from the survey presented in chapter 4 showed that in evaluation activities of the firm a distinction needs to be made between interactions with commercial and those with non-commercial actors. Furthermore, the exclusion of the items related to the adjustment of firm practices in response to feedback received from external actors shows that a distinction needs to be made between engaging in dialogue and responding to the results of that dialogue, as suggested by Ortiz-de-Mandojana & Bansal (2016). In further development of the VAC instrument, the items related to this behavior should be extended to investigate whether this responsiveness can be considered a standalone dimension of the VAC framework.

The results of the validity tests in chapter four also provide additional insights in the overall structure of the VAC framework. The dimensions of Value Receptivity, Value Articulation and Non-commercial Value Reflexivity showed the expected results: positive and significant correlations with moral motives, non-significant relationships with instrumental motives, and positive and significant correlations with the value-sensitivity of the firm’s product portfolio. Their inclusion in the VAC framework are thus supported by these results, although the distinctiveness of the Value Receptivity and Value Articulation scales from the moral motive scale require further investigation. However, as the study in chapter four concerned cross-sectional data, no causal relationships can be deterred from these results. Future research is needed to conclude whether increases in the pronunciation of moral motives lead to increases in these three dimensions and whether increases in these dimensions actually lead to more value-sensitive products.

On the contrary to the other three dimensions, the validity tests of Commercial Value Reflexivity did not confirm its inclusion in the VAC framework. Firms with increased interactions with industry partners about the societal value ‘health’ were not shown to be significantly not more or less morally motivated to act upon the value and their products were shown to not be more or less sensitive to the value. However, when generalizing

these results, we need to take into account the specific context in which was sampled – the food industry and their response to health. The societal value ‘health’ has a long-lasting presence in this industry. This presence, firstly, leads to a high level of collective knowledge in this industry about the value, visible in the large number of the hard laws (e.g. EU regulations) and soft laws (e.g. industry-wide agreements and standards) in this industry concerning health. Dialogues with industry partners will provide limited new insights on the meaning of health for their product innovation. As shown by open innovation scholars, real novel insights and innovation come from knowledge exchanges between firms from different industries (Chesbrough, 2006). Secondly, the long-lasting presence has also led to a consensus in industry on the role of firms in acting upon this value. As shown by Crilly et al. (2016) frequent and lasting interactions between actors leads to naivety and ignorance of divergent information. Dialogue with industry partners will thus likely not provide a firm with input for critical reflection on their own responsibility with regard to this value and subsequent changes in its innovation activities. For further development of the VAC framework I would thus recommend to investigate whether the same conclusions can be drawn on Commercial Value Reflexivity when applied in a context in which the industry is less familiar with a societal value and differences between firms in knowledge and views on the responsibility of industry are larger.

By developing the VAC framework, this dissertation provides the scholars of until now largely separated fields of CSR, innovation management and RRI with a conceptual framework to connect their theories and concepts. The framework shows how theories on Value Sensitive Design and moral overload in RRI could be integrated in organizational capabilities thinking driving the innovation management scholars and how the operationalization of these capabilities can be built on the business practices for social value creation identified by CSR scholars. In this manner, several of the gaps in these fields can be addressed. RRI scholars are provided with a framework to further investigate responsible innovation practices in commercial settings and at a firm level. The CSR frameworks regarding the responsiveness of firms to societal values and norms – like presented by Swanson (1999) and others (Athanasopoulou & Selsky, 2015; Gehman et al., 2013) – are extended and further operationalized.

Nonetheless, the most important contribution of the VAC is answering part of the main research question of this dissertation *How should commercial innovation management be redirected towards social value creation?*: the VAC framework provides the innovation management field with a guide to redirect their frameworks on organizational capabilities for innovation from the purpose of profit maximization to social value creation.

### 6.2.3 Objective 3: determine the role of external standards

Even if a firm has developed the capabilities to absorb societal values, a firm can still need the support of standardization organizations to navigate the complexity of these values. As shown in chapter five, CSR standards can assist firms in translating societal values to requirements for product innovation and relief them of some of the uncertainties related to the social impact of their innovations (see also Guston, 2008; Stilgoe et al., 2013; Van de Poel, 2013). However, as previously indicated, the translations of societal values are context-dependent and can change over time. Standards thus cannot be stable entities and they require to be regularly revised in order to maintain their input and output legitimacy (Botzem & Dobusch, 2012; Brunsson et al., 2012). However, since input legitimacy depends on the approval of society at large and output legitimacy on the views of the participating firms, both types of legitimacy may lead to different requirements for the standards that might conflict in case of standards' revision (Hülse & Kerwer, 2007; Mena & Palazzo, 2012; Slager et al., 2012). The implications of these conflicts on the long-term endurance of standards was, however, still a gap in the literature.

Our multi-level analysis of the products certified under a set of CSR-related standards show the complexity of pursuing both types of legitimacy with standards' revisions. Trying to increase the input legitimacy by making the standards more ambitious and thereby complying to requests from civil society, did have a positive effect on the average social value created per product but at the same time negatively affected the compliance rates of firms affected by the standards' revision. Trying to increase compliance and thus output legitimacy of the standards by making the standards less ambitious and more achievable, did not lead to an increase in compliance and additionally led to a decrease in the average social value created. As the total social value created by standards is dependent upon both the average social value created and the compliance of the participating firms, the results described in chapter five show that the revision of standards is not a straightforward tool to increase the social value created by these standards.

Besides insights on the legitimacy of standards, chapter five also contributes to achieving the third objective of this dissertation: determine the role of external standards for stimulating social value creation through innovation. Although the study results do not

provide direct insight in the impact of the standards on the internal innovation processes of the participating firms, the compliance behavior in relation to the standards' revisions allows us to provide recommendations for future research on this subject. As discussed in chapter five, the firms that experienced de-certifications and thus needed to invest more in compliance, did not do so. As indicated by Wijen (2014), when driven by instrumental motives a firm's decision to comply is determined by the outcomes of its cost-benefit analysis. If compliance requires additional innovation investment, the firm decision to comply will thus depend on whether the resources for such an investment are available and whether the compliance still provides the benefits to justify these investments. As indicated by other scholars, this latter condition could be compromised if the distinction between compliance and non-compliance is not clearly visible to the public (Ahrne & Brunsson, 2011; Wijen, 2014).

However, what if the firms are morally motivated? Does de-certification not have a negative effect on the compliance of these firms? Reasoning from observations of our case studies in chapter two, three and five, the response of these firms also relies on two conditions. First, like with the instrumentally motivated firms, the morally motivated firms need to have the resources to invest in innovation. Sacrificing all the firm's profit for compliance to standards is not a solution in this case. As indicated by one of the interviewees in chapter three: if the firm does not survive, it will also not create social value and society will not be better off. Second, the morally motivated firms need to perceive the revised standards as a legitimate representation of how society would translate the value, thus the input legitimacy of the standards (Botzem & Dobusch, 2012). If societal actors start challenging the legitimacy of the revised standards, the morally motivated firm might also be inclined to lower its compliance efforts and eventually retract its participation, if the standardization organization is not able to respond to the legitimacy challenges effectively. In future investigations of the compliance responses to the standards' revisions, the motives of the firms and these conditions thus need to be taken into account.

Another potential influence of external standards on social value creation is by influencing the development of the VAC dimensions of the affected firms, based on observations both from the interviews in chapter two and three, and from the investigation of the standards in chapter five. For Value Receptivity, establishing the standards for a particular societal value in a particular industry already could stimulate the conversations within firms about the meaning of the value for their business practices and could support the firm in developing objectives related to this value. However, the deeper philosophical

exploration indicated by Nissenbaum (2005) is unlikely to be stimulated by the existence of standards. The standardization organization could, however, facilitate such explorations by organizing meetings or workshops within the participating firms, such as described by Haen et al. (2015). For Value Articulation, standards could be considered a good tool as they translate the societal value to the design requirements for business practices and provide a common language for departments to share their experiences in responding to a societal value. However, for managing dealing with inter-value conflicts and overcoming moral overload, a firm still needs to set particular rules in when to invest additional resources for compliance to the standards and when deviation from the standards is allowed. For Value Reflexivity, just like their utility for setting objectives, the standards could also provide a tool for the firm to monitor and reflect on its innovation efforts and outcomes. However, again the standards' influence on the main part of Value Reflexivity – the dialogue with external actors – is dependent on facilitation of such conversations by the standardization for the participating firms and the presence of divergent views in such dialogues. These dialogues will often not only discuss the role of the firms in acting upon this values, but also the ability of the standards to navigate this role. The Value Reflexivity of the standardization organization itself might thus influence the direction of these conversations – as indicated previously by Hallström & Boström (2010) – and also influence the Value Reflexivity of the participating firms. However, the influences of external standards require be confirmed by further empirical studies.

In conclusion, the insights on standards' revision, compliance behavior and our observations from the case studies we showed the possible roles external standards could have for stimulating socially responsible innovation. Thereby, standards regarding societal values could play a part in redirecting commercial innovation management towards social value creation, as was the main research question of this dissertation.

### 6.3 Limitations and recommendations for future research

Although in this dissertation I have aimed to explore the three objectives thoroughly and provide a complete answer to the main research question, there are always limitations to the theoretical concepts that can be included and to the empirical investigations that can be conducted within the timeframe of a PhD project. As I already described the empirical limitations of the studies and suggestions for future research in each of the chapters, I will elaborate here only on three decisions related to the context selection for empirical work and the choice of methodology that limit the theoretical scope of this dissertation.

First, our decision to develop a survey instrument for the VAC framework has both benefits and drawbacks. On the one hand, by taking these initial steps in developing this survey instrument, we provide other scholars with the handholds to apply the VAC framework in other settings, which would benefit its further substantiation. On the other hand, the ease of implementation of the survey items might limit the critical reflection upon their content. Even though we stress in chapter four that the validation of this instrument is not completed, we are aware that some scholars might overlook these limitations in applying the survey instrument. By showing our own efforts in replicating and validating the survey items on corporate motivation for socially responsible behavior developed by Paulraj et al. (2017), we hope to inspire our fellow scholars to treat our survey with the same critical eye.

In the previous section I briefly touched upon geographical differences in value systems, showing one of the limitations of my research: my empirical investigations have been limited to one country. Besides possible issues with generalizability of my results, restricting my empirical data to one geographical market limited investigation of the dynamics of global trade and their influence on socially responsible innovation. An example of such dynamics is the impact of globalization on the power of societal actors to challenge or revoke the social license-to-operate of multinational firms. In the last decades these multinational firms have increased their geographical scope and thus their social and political power. Governments and civil society are thus also required to increase their global influence in order to have the same bargaining power (Scherer & Palazzo, 2011). Becoming a global actor is, however, not as easy for governments and civil society as it is for firms, due to differences in value systems around the world. Governments represent the value systems of their citizens and in collaborating with other governments to gain bargaining power, these value systems are likely to conflict. Although civil society might fix their attention on one particular societal value, they are seen by society as cultural carriers of virtuous behavior and morality (Haack et al., 2012). Therefore, they cannot ignore other values and need to define rules how to handle conflicts between their core societal value and other values. Firms also have to deal with these different value systems, but the economic system allows them to focus on ‘profit maximization’. Thereby, firms have a very clear rule for navigating conflicting value systems: choose the strategy in which the benefits created by the societal values included – e.g. an enjoyable product will increase sales – will balance out any costs created by neglecting other societal values – e.g. an unhealthy product can momentarily create reputation damage and reduce sales. As maximizing profit is the global norm, this rule can be applied in each community



by adjusting to their value systems.<sup>11</sup> The implications of this particular but also other global dynamics on absorption of societal values and the decision making during innovation, could provide a fruitful avenue for further research, especially in light of the impact of the Sustainable Development Goals.

A third limitation of the research presented in this dissertation is created by the decision to focus on the societal value ‘health’. The selection of this *one* societal value has allowed comparison between strategies for handling the value conflicts related to this value, but it did not shed light on one dilemma. As I indicated before, in order to be regarded socially responsible a firm should act upon societal values that are not represented by consumer purchase behavior and should invest in innovation that supports overcoming inter-value conflicts between these societal values and consumer-driven values. For each product design there are multiple societal values that are not represented in consumer purchase behavior, for example health, environmental friendliness, planetary health and working conditions of employees. However, the resources of a firm are limited, and they cannot act upon all societal values simultaneously. As all these societal values together define what an ideal society looks like, there is no moral way to make trade-offs between them. How should a firm make decisions on which inter-value conflicts to innovate upon? Previous research in these conflicts have led to tools such as materiality analyses and risk assessments. These tools, however, often still ask the question: ‘which societal issues threaten the firm’s own survival?’ Looking at the Sustainable Development Goals and the societal request to firms to create social value, business scholars should develop tools that asks the question: ‘To which societal value – beyond economic prosperity – can the firm contribute the most?’

Finally, identifying the motives and the organizational capabilities for the absorption of societal values, and the influence of standards on socially responsible innovation are only a first steps in redirecting commercial innovation management towards social value creation. Besides continuing the validation of the VAC survey instrument and investigating the influence of standards on the VAC dimensions, many other elements of innovation management theory require investigation. For example, outlining the VAC dimensions does not provide insights in how the VAC of a firm can be increased. As indicated in chapter four, the influence of specific organizational structures and CSR-related activities on the VAC of a firm require empirical investigation. For the

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<sup>11</sup> When the survival of a firm is heavily dependent on their reputation and sales in one community (e.g. their country of origin), the value system of that community might be more prioritized in their decision making. This is especially the case if there is a high risk that signals of immoral behavior (e.g. bribes, slavery) will be picked up by societal actors in this community.

methodology of such a study, inspiration can be drawn from the study of Janssen et al. (2005) on the organizational antecedents of AC. Another field relevant for finding organizational structure and procedures that could support the development of VAC within firms, is the field of sustainability management accounting, as recently outlined by Maas et al. (2016).

## 6.4 Practical implications

As responsible research should be conducted no just *with* but also *for* society, in this section I would like to briefly reflect upon societal implications of the knowledge created through the research in this dissertation. As three of the four studies are exploratory in nature and provide thus no evidence on causal relationships, my practical implications are shaped like handholds for critical reflection. The first three handholds are for firms to reflect upon their own social value creation through product (or service) innovation. The last handhold I provide for standardization organizations and other parties involved in developing voluntary standards.

First, creating social value through new products or services starts by redefining the purpose of innovation within the firm. As part of becoming a purpose-driven organization that goes beyond profit maximization (see Van Tulder, 2018), a firm needs to evaluate whether its innovation process reflects the firm's new social purpose. This social purpose could be to comply with a particular societal value or to contribute to a particular Sustainable Development Goal. In order to make sure this innovation process is redirected the managers in a firm could ask themselves and their teams the following questions:

- Are all employees involved in product development aware of the social purpose of the firm and moral motives for innovation related to this purpose?
- Do the criteria for evaluating the potential of new product concepts reflect the social purpose of my firm?
- Are all departments involved in product development proactively looking for innovations that overcome inter-value conflicts related to my firm's social purpose?
- Are possible intra-value conflicts between societal actors related to our social purpose quickly identified and is there a procedure on how to handle such conflicts?
- Do the indicators used to monitor product success in the market represent the firm's purpose?

Second, to stimulate reflection upon the social value creation of a firm within its organization, it is important that the results of this social value creation are communicated back to the employees of the firm and spaces for evaluating these results are created. This communication should not only concern the positive responses from society, but also the critical feedback from societal actors on the firm's products and business practices. The main question in these reflections should not be closed – such as “Do we agree with the view of the societal actor?” or “Is the view of this societal actor relevant for us?” – but should be more open – like “How is the feedback of the societal actor related to our purpose and our translation of societal values?” and “How can we engage in dialogue with this actor (and other societal actors) to create a better understanding of his/her feedback and possible implications for our practices?”. To allow this open attitude towards divergent views to spread across the organization, involvement of multiple departments in these reflections might be relevant instead of dividing the firm into two camps: the internal and external functions.

Third, in responding to societal values, managers and employees should realize that their firm's practices do not happen in isolation and their actions influence how society translates a societal value. For example, if a firm adds the claim ‘gluten-free’ to its packaging, it does not only respond to a health norm that was expressed by a particular consumer segment in their market research, they also reinforce this health norm by diffusing it to a larger audience reaching consumers that might not have considered the health norm previously. In forming their value systems, consumers draw information from many sources including marketing messages. Defending the inclusion of a health norm with the argument that consumer research indicated its relevance, thereby, does not only show the limited scope of the firm's definition of social value but also shows an ignorance for the firm's influence on society's value system.

Lastly, I would like to reflect upon practical implications of the legitimacy of a standardization organizations. As indicated in the chapter five, the input legitimacy of standards is dependent on behavioral visibility of the participating in order to allow societal actors to monitor the procedures of the standardization organization. However, this behavioral visibility might also scare of the low performing firms to participate. Therefore, once it reached a certain cap, the participation rate of the standards will no longer increase. When the income of the standardization organization is dependent on membership fees from the participating firms, there is also a cap in the resources it can collect. In its efforts to increase the participation rate and thus its resources, a standardization organization might be tempted to not revise its standards. In that way,

the standards are more stable and predictable, allowing new firms to adjust their business practices and increase their compliance rates before joining. The predictability of the standards will allow firms also to better estimate when they reach return-on-investment for membership and compliance costs. However, not revising the standards will likely damage the input legitimacy, as the standards will no longer be responsive to insights from their implementation and changes in society. One way to negate this downwards spiral is to make the income of the standardization organization independent of the participation and compliance rates of the standards. On the other hand, the income of the standardization organization should also not be dependent on the societal actors that judge its input legitimacy, as that could also lead to power play. Therefore, one of the most important elements of setting up a standardization organization is to set up a financing structure that is independent of fluctuations in its output or input legitimacy.

## 6.5 Closing statement

To conclude this dissertation, I would like to come back to its title: “Reset the game – Redirecting the purpose of innovation from profit maximization to social value creation”. As indicated in the introduction, the role of commercial innovation in business management was diminished over the decades to a way to gain competitive advantage and thereby maximizing profit. In order to allow commercial innovation, create social value and provide solutions for society’s grand challenges, innovation management theory needs to be redirected: the game requires a reset. In this dissertation, I have shown that this reset does not need to be a ‘hard’ reset, we do not need to wipe the memory of the innovation management field. Instead this dissertations builds upon the traditional parts of innovation management and enter new parts from other fields such as RRI and CSR. The discussion of this dissertation shows that the reset procedure has not been completed: the redirection of commercial innovation is not finished. Instead, the dissertation provides a script on how scholars could continue the reset procedure. Although in writing this script I cannot anticipate every step of this reset – some steps need to be defined by trial-and-error – I hope that it will inspire other scholars and practitioners to join the rebuilding of the game called ‘commercial innovation’.

## Appendices

### 6.6 Appendix A (Chapter 2)

**Table S1.** Overview of the data collected per case

<i>Company</i>	<i>Interviewees</i>	<i>Secondary sources</i>	
<i>Case A</i>	Quality Manager Policy Officer	7	(1 Corporate report; 6 CSR reports)
<i>Case B</i>	Quality manager	11	(2 Codes of conduct; 1 Corporate report; 8 CSR reports)
<i>Case C</i>	R&D manager Nutrition Communication manager	11	(3 Corporate reports; 3 CSR reports; 5 webpages)
<i>Case D</i>	Marketing manager	9	(2 Codes of conduct; 7 webpages)
<i>Case E</i>	Marketing manager	1	(1 webpage)
<i>Case F</i>	Two marketing managers	9	(2 Codes of conduct; 2 CSR reports; 5 webpages)
<i>Case G</i>	Marketing & Sales director Marketing Manager R&D manager	5	(3 Corporate reports; 2 webpages)
<i>Case H</i>	Marketing & sales manager	4	(2 CSR reports; 2 webpages)

**Table S2.** Overview of moral motives for healthy innovation mentioned per firm\*

<i>Case</i>	<i>Size</i>	<i>Products with label</i>	<i>Moral motives for healthy innovation per case*</i>				
			Moral agency	Causality	Knowledge of consequences	Transgressing a norm	Freedom to act
<i>Case A - Retailer</i>	Large	829	+	+	+	+	+/-
<i>Case B - Retailer</i>	Large	634	+	+	+	+	+/-
<i>Case C - Producer</i>	Large	332	+	+	+	+	-
<i>Case D - Producer</i>	Large	74	+	+	+	+/-	+
<i>Case E - Producer</i>	Medium	42	NA	NA	?	NA	?
<i>Case F - Producer</i>	Medium	56	+	+ / NA	+	-	+
<i>Case G - Producer</i>	Medium	17	+	+	-	+	-
<i>Case H - Producer</i>	Small	100	+	+ / NA	+	+	+

\* ? = the condition was not specifically mentioned in firm data; NA = firm indicates that the condition is not applicable and thus denies this condition of responsibility; + = the condition was mentioned as a motive for healthy innovation; - = the condition was mentioned but the firm indicates to be restricted in complying with this condition.

## 6.7 Appendix B (Chapter 3)

**Table S3.** Overview of literature about Absorptive Capacity (AC) reviewed for this article.

<b>Research subject</b>	<b>Authors</b>	<b>Research design</b>
<b>Defining AC and its dimensions</b>		
<i>Reconceptualization of AC</i>	(Zahra & George, 2002)	Conceptual paper
<i>Reification of AC</i>	(Lane, Koka, & Pathak, 2002, 2006)	Conceptual paper
<i>Reconceptualization of AC</i>	(Todorova & Durisin, 2007)	Conceptual paper
<i>AC, antecedents and firm performance</i>	(Volberda, Foss, & Lyles, 2010)	Systematic literature review
<i>Dynamic model of Absorptive capacity</i>	(Alexy, George, & Salter, 2011)	Conceptual paper
<i>Scale development for AC</i>	(Flatten, Engelen, Zahra, & Brettel, 2011)	Survey analysis (primary data)
<i>AC conceptualization in information systems literature</i>	(Roberts, Galluch, Dinger, & Grover, 2012)	Literature review
<b>Design Thinking and Absorptive Capacity</b>	(Cabello, Baldessarelli, & Tucci, 2016)	Conceptual paper
<b>Antecedents of AC</b>		
<i>Task variation on individual AC</i>	(Schilling, Marangoni, Vidal, & Rajan, 2000)	Experiment
<i>Internal Information Provision on AC</i>	(Lenox & King, 2004)	Survey analysis (primary data)
<i>Organizational antecedents of AC</i>	(Jansen, Van Den Bosch, & Volberda, 2005)	Survey analysis (primary data)
<i>Technology-based alliances on AC</i>	(Nooteboom, Van Haverbeke, Duysters, Gilsing, & van den Oord, 2007)	Secondary data analysis
<i>Antecedents of AC</i>	(van Wijk, Jansen, & Lyles, 2008)	Meta-analysis
<i>Micro level mechanisms on AC and knowledge sharing</i>	(Foss, Husted, & Michailova, 2010)	Systematic literature review
<i>AC, antecedents and firm performance</i>	(Volberda et al., 2010)	Systematic literature review
<i>Micro-foundations of AC</i>	(Lewin, Massini, & Peeters, 2011)	Conceptual paper
<i>Business partner innovativeness on AC</i>	(Wagner, Moos, Beimborn, & Weitzel, 2012, 2015)	Survey analysis (primary data)
<i>Contextual factors on AC</i>	(Steenrod & Lin, 2013)	Case study
<i>Micro-foundations of AC</i>	(Lowik, Kraaijenbrink, & Groen, 2016, 2013)	Survey analysis (primary data)
<i>Organizational energy as antecedent of AC</i>	(Alexiou & Khanagha, 2014; Alexiou, Khanagha, & Schippers, 2019)	Survey analysis (primary data)

**Table S3. (continued)** Overview of literature about Absorptive Capacity (AC) reviewed for this article.

<b>Research subject</b>	<b>Authors</b>	<b>Research design</b>
<b><i>Antecedents of AC (continued)</i></b>		
<i>Antecedents AC in Social and Environmental Accounting</i>	(Gutierrez-Hueter O, Gold, Moon, & Chapple, 2015, 2016)	Interview-based case study
<i>Antecedents of AC – typology</i>	(Cosaert & Volberda, 2016)	Meta-analysis
<i>Knowledge antecedents of AC</i>	(Nottter, Marttila, Schweiger, Romanova Stettler, & Baldauf, 2018)	Meta-analysis
<i>Employee incentives on AC</i>	(Wang, Zhao, & Zhou, 2018)	Survey analysis (primary data)
<i>Employee innovativeness and other antecedents on AC</i>	(Schweisfurth & Raasch, 2018)	Survey analysis (primary data)
<i>Collective research centers on AC and open innovation</i>	(Spithoven, Clarysse, & Knockaert, 2011)	Survey analysis (primary data)
<i>Employees' learning goals and civic virtue on AC</i>	(Yao & Chang, 2017)	Survey analysis (primary data)
<b><i>AC's impact on firm performance</i></b>		
<i>AC on international acquisitions</i>	(Barkema & Nadolska, 2003)	Secondary data analysis
<i>AC on alliance formation</i>	(Lavie & Rosenkopf, 2006)	Secondary data analysis
<i>AC on NPD performance</i>	(Abecassis-Moedas & Mahmoud-Jouini, 2007, 2008)	Case study
<i>AC and strategic alliances on subjective firm performance</i>	(Flatten, Greve, & Brettel, 2011)	Survey analysis (primary data)
<i>AC on SME international performance capacity</i>	(Sternad, Mundschtütz, & Knappitsch, 2013)	Conceptual paper
<i>Stakeholders' AC on legitimacy</i>	(D'Souza & Peake, 2012; Peake & D'Souza, 2014)	Conceptual paper
<i>AC on innovation implementation in healthcare organizations</i>	(Innis & Berta, 2016, 2014)	Systematic literature review
<i>AC on university-firm technology transfer</i>	(Dell'Anno & del Giudice, 2015)	Systematic literature review
<i>AC on organizational performance</i>	(Maldonado, Salaiz, Vera, & Keller, 2019; Maldonado, Vera, & Keller, 2015)	Meta-analysis
<i>AC as mediator between entrepreneurial orientation and financial performance</i>	(Patel, Kohtamäki, Parida, & Wincent, 2015)	Survey analysis (primary data)



**Table S3. (continued)** Overview of literature about Absorptive Capacity (AC) reviewed for this article.

<b>Research subject</b>	<b>Authors</b>	<b>Research design</b>
<b><i>AC's impact on firm performance (continued)</i></b>		
<i>AC and social networks on innovation performance</i>	(Tortoriello, 2015)	Survey analysis (primary data)
<i>AC on fluidity of regional headquarters</i>	(Kähkö, Saittakari, Piekkari, & Barner-Rasmussen, 2017)	Secondary data analysis and survey analysis (primary data)
<i>AC on financial performance</i>	(Marttila, Nottter, Schweiger, Romanova Stettler, & Baldauf, 2017)	Meta-analysis
<i>AC on collaborative learning in research alliances</i>	(Nasiri & Duysters, 2017)	Quantitative data analysis★
<i>AC on innovative performance and financial performance</i>	(Zou, Errug, & George, 2017, 2018)	Meta-analysis
<i>AC and knowledge conditions on financial and innovative performance</i>	(Song, Gnyawali, Srivastava, & Asgari, 2018)	Meta-analysis
<i>AC on innovation performance SMEs</i>	(Linaj & Berrnroider, 2019)	Survey analysis (primary data)
<b><i>AC and social/environmental value creation</i></b>		
<i>AC on global environment strategy implementation</i>	(Pinkse, Kuss, & Hoffmann, 2010)	Case study
<i>AC in response to climate change</i>	(Busch, 2011)	Case study
<i>AC on proactive environmental strategies</i>	(Delmas, Hoffmann, & Kuss, 2011)	Survey analysis (primary data)
<i>AC applied to motives for environmental action</i>	(Jenkin, McShane, & Webster, 2011)	Case study
<i>AC applied to relationship CSR and financial performance</i>	(Tang, Hull, & Rothenberg, 2012)	Secondary data analysis
<i>Knowledge spillovers and environmental technology transfer on AC</i>	(Hoppmann, 2013, 2018)	Secondary data analysis
<i>AC on sustainable innovation</i>	(Ketata, Sofka, & Grimpe, 2015)	Secondary data analysis
<i>AC on green innovation and business performance</i>	(Leal-Rodriguez, Martelo-Landroguez, & Aragon-Correa, 2016)	Quantitative data analysis★
<i>AC on sustainability standard implementation</i>	(Upstill-Goddard, Glass, Dainty, & Nicholson, 2016)	Case study

**Table S3. (continued)** Overview of literature about Absorptive Capacity (AC) reviewed for this article.

<b>Research subject</b>	<b>Authors</b>	<b>Research design</b>
<i>AC and social/environmental value creation (continued)</i>		
<i>AC on sustainability standard implementation</i>	(Bowler, Castka, & Balzarova, 2017)	Case study
<i>AC on shared value creation in social enterprises</i>	(Campos-Climent & Sanchis-Palacio, 2017)	Survey analysis (primary data)
<i>AC on sustainability practices</i>	(Riikkinen, Kauppi, & Salmi, 2017)	Secondary data analysis
<i>AC on technology transfer and sustainable development</i>	(Verdolini & Bosetti, 2017)	Secondary data analysis
<i>Dynamic capabilities for environmental innovation</i>	(Watson, Wilson, Smart, & Macdonald, 2017)	Conceptual paper
<i>AC and green innovation performance</i>	(Pacheco, Alves, & Liboni, 2018)	Survey analysis (primary data)
<i>CSR knowledge on financial performance</i>	(Gangi, Mustilli, & Varrone, 2019)	Secondary data analysis
<i>AC and firm collaboration on environmental policy action</i>	(Jakobsen, Lauvås, & Steinmo, 2019)	Case study

★data collection method not specified

## References of Literature Review

- Abecassis-Moedas, C., & Mahmoud-Jouini, S. B. (2007). Source-Recipient Knowledge Complementarity: A Framework Of Design Absorption Process in NPD. *Academy of Management Proceedings*, 2007(1), 1–6. <https://doi.org/10.5465/ambpp.2007.26530464>
- Abecassis-Moedas, C., & Mahmoud-Jouini, S. B. (2008). Absorptive Capacity and Source-Recipient Complementarity in Designing New Products: An Empirically Derived Framework \*. *Journal of Product Innovation Management*, 25(5), 473–490. <https://doi.org/10.1111/j.1540-5885.2008.00315.x>
- Alexiou, A., & Khanagha, S. (2014). Organizational Energy as the Mediator Between Organizational Structure and Absorptive Capacity. *Academy of Management Proceedings*, 2014(1), 15842. <https://doi.org/10.5465/ambpp.2014.15842abstract>
- Alexiou, A., Khanagha, S., & Schippers, M. C. (2019). Productive organizational energy mediates the impact of organizational structure on absorptive capacity. *Long Range Planning*, 52(2), 155–172. <https://doi.org/10.1016/j.lrp.2018.02.001>
- Alexy, O., George, G., & Salter, A. (2011). From Sensing Shape To Shaping Sense: A Dynamic Model Of Absorptive Capacity And Selective Revealing. *Academy of Management Proceedings*, 2011(1), 1–6. <https://doi.org/10.5465/ambpp.2011.65869638>
- Barkema, H. G., & Nadolska, A. (2003). How Internationalizing Firms Develop Their Absorptive Capacity Over Time: The Case Of Acquisitions. *Academy of Management Proceedings*, 2003(1), 11–16. <https://doi.org/10.5465/ambpp.2003.13792606>
- Bowler, K., Castka, P., & Balzarova, M. (2017). Understanding Firms' Approaches to Voluntary Certification: Evidence from Multiple Case Studies in FSC Certification. *Journal of Business Ethics*, 145(2), 441–456. <https://doi.org/10.1007/s10551-015-2880-1>
- Busch, T. (2011). Organizational adaptation to disruptions in the natural environment: The case of climate change. *Scandinavian Journal of Management*, 27(4), 389–404. <https://doi.org/10.1016/j.scaman.2010.12.010>
- Cabello, A., Baldessarelli, G., & Tucci, C. L. (2016). Enhancing Absorptive Capacity—The Case of Design Thinking. *Academy of Management Proceedings*, 2016(1), 16728. <https://doi.org/10.5465/ambpp.2016.16728abstract>
- Campos-Climent, V., & Sanchis-Palacio, J. R. (2017). The influence of Knowledge Absorptive Capacity on Shared Value Creation in Social Enterprises. *Journal of Knowledge Management*, 00–00. <https://doi.org/10.1108/JKM-02-2017-0084>
- Cosaert, L. J., & Volberda, H. W. (2016). Opening the black box of absorptive capacity: A meta-analytical review of the micro mechanisms. *Academy of Management Proceedings*, 2016(1), 14699. <https://doi.org/10.5465/ambpp.2016.14699abstract>
- Dell'Anno, D., & del Giudice, M. (2015). Absorptive and desorptive capacity of actors within university-industry relations: Does technology transfer matter? *Journal of Innovation and Entrepreneurship*, 4(1), 13. <https://doi.org/10.1186/s13731-015-0028-2>
- Delmas, M., Hoffmann, V. H., & Kuss, M. (2011). Under the Tip of the Iceberg: Absorptive Capacity, Environmental Strategy, and Competitive Advantage. *Business & Society*, 50(1), 116–154. <https://doi.org/10.1177/0007650310394400>
- D'Souza, D. E., & Peake, W. O. (2012). What's Missing in Entrepreneurial Legitimacy Research? Acknowledging Stakeholder Absorptive Capacity. *Academy of Management Proceedings*, 2012(1), 10154. <https://doi.org/10.5465/AMBPP.2012.10154abstract>
- Flatten, T. C., Engelen, A., Zahra, S. A., & Brettel, M. (2011). A measure of absorptive capacity: Scale development and validation. *European Management Journal*, 29(2), 98–116. <https://doi.org/10.1016/j.emj.2010.11.002>

- Flatten, T. C., Greve, G. I., & Brettel, M. (2011). Absorptive Capacity and Firm Performance in SMEs: The Mediating Influence of Strategic Alliances. *European Management Review*, 8(3), 137–152. <https://doi.org/10.1111/j.1740-4762.2011.01015.x>
- Foss, N. J., Husted, K., & Michailova, S. (2010). Governing Knowledge Sharing in Organizations: Levels of Analysis, Governance Mechanisms, and Research Directions. *Journal of Management Studies*, 47(3), 455–482. <https://doi.org/10.1111/j.1467-6486.2009.00870.x>
- Gangi, F., Mustilli, M., & Varrone, N. (2019). The impact of corporate social responsibility (CSR) knowledge on corporate financial performance: Evidence from the European banking industry. *Journal of Knowledge Management*, 23(1), 110–134. <https://doi.org/10.1108/JKM-04-2018-0267>
- Gutierrez-Huerter O, G., Gold, S., Moon, J., & Chapple, W. (2015). Social Environmental Accounting and Reporting: MNC's Governance, Absorptive Capacity and Learning. *Academy of Management Proceedings*, 2015(1), 11348. <https://doi.org/10.5465/ambpp.2015.11348abstract>
- Gutierrez-Huerter O, G., Gold, S., Moon, J., & Chapple, W. (2016). Transfer of Social and Environmental Accounting and Reporting Knowledge: Subsidiary Absorptive Capacity and Organisational Mechanisms. *Research in Global Strategic Management*, 17, 299–328. <https://doi.org/10.1108/S1064-485720160000017014>
- Hoppmann, J. (2013). The Role of Knowledge Spillovers for Firm-Level Innovation in Environmental Technologies. *Academy of Management Proceedings*, 2013(1), 12943. <https://doi.org/10.5465/ambpp.2013.12943abstract>
- Hoppmann, J. (2018). The Role of Interfirm Knowledge Spillovers for Innovation in Mass-Produced Environmental Technologies: Evidence from the Solar Photovoltaic Industry. *Organization & Environment*, 31(1), 3–24. <https://doi.org/10.1177/1086026616680683>
- Innis, J., & Berta, W. (2016). Routines for change: How managers can use absorptive capacity to adopt and implement evidence-based practice. *Journal of Nursing Management*, 24(6), 718–724. <https://doi.org/10.1111/jonm.12368>
- Innis, J., & Berta, W. B. (2014). Organizational Learning Capacity and Health Literacy in Acute Care Hospitals. *Academy of Management Proceedings*, 2014(1), 11571. <https://doi.org/10.5465/ambpp.2014.11571abstract>
- Jakobsen, S., Lauvås, T. A., & Steinmo, M. (2019). Collaborative dynamics in environmental R&D alliances. *Journal of Cleaner Production*, 212, 950–959. <https://doi.org/10.1016/j.jclepro.2018.11.285>
- Jansen, J. J. P., Van Den Bosch, F. A. J., & Volberda, H. W. (2005). Managing Potential and Realized Absorptive Capacity: How Do Organizational Antecedents Matter? *The Academy of Management Journal*, 48(6), 999–1015. <https://doi.org/10.2307/20159726>
- Jenkin, T. A., McShane, L., & Webster, J. (2011). Green Information Technologies and Systems: Employees' Perceptions of Organizational Practices. *Business & Society*, 50(2), 266–314. <https://doi.org/10.1177/0007650311398640>
- Kähäri, P., Saittakari, I., Piekkari, R., & Barner-Rasmussen, W. (2017). Explaining Mandate Loss of Regional Headquarters: The Difference between Full and Partial Loss: Explaining Mandate Loss of Regional Headquarters. *Journal of Management Studies*, 54(8), 1206–1240. <https://doi.org/10.1111/joms.12310>
- Ketata, I., Sofka, W., & Grimpe, C. (2015). The role of internal capabilities and firms' environment for sustainable innovation: Evidence for Germany: Internal capabilities and firms' environment. *R&D Management*, 45(1), 60–75. <https://doi.org/10.1111/radm.12052>
- Lane, P. J., Koka, B., & Pathak, S. (2002). A Thematic Analysis and Critical Assessment Of Absorptive Capacity Research. *Academy of Management Proceedings*, 2002(1), M1–M6. <https://doi.org/10.5465/apbpp.2002.7516527>

- Lane, P. J., Koka, B. R., & Pathak, S. (2006). The reification of absorptive capacity: A critical review and rejuvenation of the construct. *Academy of Management Review*, 31(4), 833–863.
- Lavie, D., & Rosenkopf, L. (2006). Balancing Exploration and Exploitation in Alliance Formation. *Academy of Management Journal*, 49(4), 797–818. <https://doi.org/10.5465/amj.2006.22083085>
- Leal-Rodriguez, A. L., Martelo-Landroguez, S., & Aragon-Correa, J. A. (2016). Why Going Green Pays Off? From Absorptive Capacity to Green Innovation and Performance. *Academy of Management Proceedings*, 2016(1), 15985. <https://doi.org/10.5465/ambpp.2016.15985abstract>
- Lenox, M., & King, A. (2004). Prospects for developing absorptive capacity through internal information provision. *Strategic Management Journal*, 25(4), 331–345. <https://doi.org/10.1002/smj.379>
- Lewin, A. Y., Massini, S., & Peeters, C. (2011). Microfoundations of Internal and External Absorptive Capacity Routines. *Organization Science*, 22(1), 81–98.
- Limaj, E., & Bernroider, E. W. N. (2019). The roles of absorptive capacity and cultural balance for exploratory and exploitative innovation in SMEs. *Journal of Business Research*, 94, 137–153. <https://doi.org/10.1016/j.jbusres.2017.10.052>
- Lowik, S., Kraaijenbrink, J., & Groen, A. (2016). The team absorptive capacity triad: A configurational study of individual, enabling, and motivating factors. *Journal of Knowledge Management*, 20(5), 1083–1103. <https://doi.org/10.1108/JKM-11-2015-0433>
- Lowik, S., Kraaijenbrink, J., & Groen, A. J. (2013). How Absorptive Capacity is More Than the Sum of Its Parts. Configurational Study of Micro-Foundations. *Academy of Management Proceedings*, 2013(1), 10424. <https://doi.org/10.5465/ambpp.2013.10424abstract>
- Maldonado, T., Salaiz, A., Vera, D., & Keller, R. T. (2019). Taking Stock of the Absorptive Capacity Construct and its Dimensions in the Context of Technological Innovation: A Meta-Analytic Approach. *IEEE Transactions on Engineering Management*, 66(2), 193–207. <https://doi.org/10.1109/TEM.2018.2817388>
- Maldonado, T., Vera, D. M., & Keller, R. T. (2015). Reconsidering Absorptive Capacity: A Meta-Analysis to Improve Theoretical Foundations and Measures. *Academy of Management Proceedings*, 2015(1), 15545. <https://doi.org/10.5465/ambpp.2015.298>
- Marttila, N., Notter, I., Schweiger, S. A., Romanova Stettler, T., & Baldauf, A. (2017). Illuminating the Relationship Between Absorptive Capacity and Firm Performance: A Meta-Analysis. *Academy of Management Proceedings*, 2017(1), 10687. <https://doi.org/10.5465/AMBPP.2017.10687abstract>
- Nasiri, M. N., & Duysters, G. (2017). Let's Find it Together: Collaborative Search Based on Collective Absorptive Capacity. *Academy of Management Proceedings*, 2017(1), 16367. <https://doi.org/10.5465/AMBPP.2017.16367abstract>
- Notter, I., Marttila, N., Schweiger, S. A., Romanova Stettler, T., & Baldauf, A. (2018). Knowledge Antecedents of Absorptive Capacity: A Meta-Analysis. *Academy of Management Proceedings*, 2018(1), 10334. <https://doi.org/10.5465/AMBPP.2018.10334abstract>
- Pacheco, L. M., Alves, M. F. R., & Liboni, L. B. (2018). Green absorptive capacity: A mediation-moderation model of knowledge for innovation. *Business Strategy and the Environment*, 27(8), 1502–1513. <https://doi.org/10.1002/bse.2208>
- Patel, P. C., Kohtamäki, M., Parida, V., & Wincent, J. (2015). Entrepreneurial orientation-as-experimentation and firm performance: The enabling role of absorptive capacity: Entrepreneurial Orientation-as-experimentation and Firm Performance. *Strategic Management Journal*, 36(11), 1739–1749. <https://doi.org/10.1002/smj.2310>
- Peake, W. O., & D'Souza, D. (2014). Toward An Integrative Research Framework for New Venture Legitimacy Judgment Formation. *Journal of Small Business Economics*, 24(2), 41–68.

- Pinkse, J., Kuss, M. J., & Hoffmann, V. H. (2010). On the implementation of a 'global' environmental strategy: The role of absorptive capacity. *International Business Review*, 19(2), 160–177. <https://doi.org/10.1016/j.ibusrev.2009.11.005>
- Riikkinen, R., Kauppi, K., & Salmi, A. (2017). Learning Sustainability? Absorptive capacities as drivers of sustainability in MNCs' purchasing. *International Business Review*, 26(6), 1075–1087. <https://doi.org/10.1016/j.ibusrev.2017.04.001>
- Roberts, N., Galluch, P. S., Dinger, M., & Grover, V. (2012). Absorptive Capacity and Information Systems Research: Review, Synthesis, and Directions for Future Research. *MIS Quarterly*, 36(2), 625–648.
- Schilling, M. A., Marangoni, A., Vidal, P., & Rajan, M. (2000). Learning By Doing Something Else: The Impact Of Task Variation On Organizational Learning Curves. *Academy of Management Proceedings*, 2000(1), E1–E6. <https://doi.org/10.5465/apbpbp.2000.5438542>
- Schweisfurth, T. G., & Raasch, C. (2018). Absorptive capacity for need knowledge: Antecedents and effects for employee innovativeness. *Research Policy*, 47(4), 687–699. <https://doi.org/10.1016/j.respol.2018.01.017>
- Song, Y., Gnyawali, D. R., Srivastava, M. K., & Asgari, E. (2018). In Search of Precision in Absorptive Capacity Research: A Synthesis of the Literature and Consolidation of Findings. *Journal of Management*, 44(6), 2343–2374. <https://doi.org/10.1177/0149206318773861>
- Spithoven, A., Clarysse, B., & Knockaert, M. (2011). Building absorptive capacity to organise inbound open innovation in traditional industries. *Technovation*, 31(1), 10–21. <https://doi.org/10.1016/j.technovation.2010.10.003>
- Steenrod, J. E., & Lin, M. K. (2013). The Environmental Context of Absorptive Capacity for Collaborative Care Management. *Academy of Management Proceedings*, 2013(1), 16323. <https://doi.org/10.5465/ambpp.2013.16323abstract>
- Sternad, D., Mundschtütz, C., & Knappitsch, E. (2013). A dynamic model of SME international performance capacity: The accelerating function of cooperation effects. *Journal of Small Business & Entrepreneurship*, 26(3), 277–297. <https://doi.org/10.1080/08276331.2013.803674>
- Tang, Z., Hull, C. E., & Rothenberg, S. (2012). How Corporate Social Responsibility Engagement Strategy Moderates the CSR–Financial Performance Relationship: CSR Engagement Strategy. *Journal of Management Studies*, 49(7), 1274–1303. <https://doi.org/10.1111/j.1467-6486.2012.01068.x>
- Todorova, G., & Durisin, B. (2007). Absorptive Capacity: Valuing a Reconceptualization. *The Academy of Management Review*, 32(3), 774–786. <https://doi.org/10.2307/20159334>
- Tortoriello, M. (2015). The social underpinnings of absorptive capacity: The moderating effects of structural holes on innovation generation based on external knowledge. *Strategic Management Journal*, 36(4), 586–597. <https://doi.org/10.1002/smj.2228>
- Upstill-Goddard, J., Glass, J., Dainty, A., & Nicholson, I. (2016). Implementing sustainability in small and medium-sized construction firms: The role of absorptive capacity. *Engineering, Construction and Architectural Management*, 23(4), 407–427. <https://doi.org/10.1108/ECAM-01-2015-0015>
- van Wijk, R., Jansen, J. J. P., & Lyles, M. A. (2008). Inter- and Intra-Organizational Knowledge Transfer: A Meta-Analytic Review and Assessment of its Antecedents and Consequences. *Journal of Management Studies*, 45(4), 830–853. <https://doi.org/10.1111/j.1467-6486.2008.00771.x>
- Verdolini, E., & Bosetti, V. (2017). Environmental Policy and the International Diffusion of Cleaner Energy Technologies. *Environmental and Resource Economics*, 66(3), 497–536. <https://doi.org/10.1007/s10640-016-0090-7>
- Volberda, H. W., Foss, N. J., & Lyles, M. A. (2010). PERSPECTIVE—Absorbing the Concept of Absorptive Capacity: How to Realize Its Potential in the Organization Field. *Organization Science*, 21(4), 931–951. <https://doi.org/10.1287/orsc.1090.0503>

- Wagner, H.-T., Moos, B., Beimborn, D., & Weitzel, T. (2012). The Contagious Power of Innovativeness: A Comparison of Different Types of Firm Partners. *Academy of Management Proceedings*, 2012(1), 12505. <https://doi.org/10.5465/AMBPP.2012.12505abstract>
- Wagner, H.-T., Moos, B., Beimborn, D., & Weitzel, T. (2015). The Contagious Power of Innovativeness: How Different Corporate Partners Contribute to a Firm's Knowledge. *International Journal of Innovation Management*, 19(04), 1550042. <https://doi.org/10.1142/S1363919615500425>
- Wang, L., Zhao, J. Z., & Zhou, K. Z. (2018). How do incentives motivate absorptive capacity development? The mediating role of employee learning and relational contingencies. *Journal of Business Research*, 85, 226–237. <https://doi.org/10.1016/j.jbusres.2018.01.010>
- Watson, R., Wilson, H. N., Smart, P., & Macdonald, E. K. (2017). Harnessing Difference: A Capability-Based Framework for Stakeholder Engagement in Environmental Innovation. *Journal of Product Innovation Management*. <https://doi.org/10.1111/jpim.12394>
- Yao, F. K., & Chang, S. (2017). Do Individual Employees' Learning Goal Orientation and Civic Virtue Matter? A Micro-Foundations Perspective on Firm Absorptive Capacity: The Micro-Foundations of Firm Absorptive Capacity. *Strategic Management Journal*, 38(10), 2041–2060. <https://doi.org/10.1002/smj.2636>
- Zahra, S. A., & George, G. (2002). Absorptive Capacity: A Review, Reconceptualization, and Extension. *The Academy of Management Review*, 27(2), 185–203.
- Zou, T., Ertug, G., & George, G. (2017). The Capacity to Innovate: A Meta Analysis of Absorptive Capacity and Its Performance Implications. *Academy of Management Proceedings*, 2017(1), 12806. <https://doi.org/10.5465/AMBPP.2017.12806abstract>
- Zou, T., Ertug, G., & George, G. (2018). The capacity to innovate: A meta-analysis of absorptive capacity. *Innovation*, 20(2), 87–121. <https://doi.org/10.1080/14479338.2018.1428105>

### *Example of coding*

*Excerpt from interview with manager of firm G*

Interviewer: “You first talked about the innovation council and the different themes you discuss there. Is ‘health’ also a theme you discuss?”

Manager: “Yes, every time. That’s for us... Well... Look, if we are going to say [to the consumer] that we are going to become very healthy, then that goes against our [brand] positioning. In case of our credibility, it is like: ‘[Firm name] is just these sandwich spreads [*explained earlier as indulgence product*]’. So, if we are really going to say: ‘we are so healthy’, that is not clever. But what we do try is for example... Vegetable intake is a very hot topic and that is more closely aligned with us. So, to give an example, we have now introduced a concept in health care [facilities], which are little salad cups with 80 grams of vegetables. Then you already have 80 grams of your daily intake [of 250 grams]. Previously we were talking with dieticians and one of them said about these small cups: ‘that’s really good to have for our patients because then they don’t feel like they have to eat a lot’. These insights we tested with our consumers and there it worked in the same way. Because people prefer the taste of other things over vegetables, [although] they know it is good for them. So, such a small cup makes it interesting [for them], because then they still consume 80 grams extra.”

#### ***Coding layer 1 ‘Value hierarchy’:***

Value = ‘health’ >> “Yes, every time. That’s for us...”

Norm = vegetable intake >> “Vegetable intake is a very hot topic...”

Design requirement = 80 grams of daily intake >> “little salad cups with 80 grams of vegetables”

#### ***Coding layer 2 ‘Value conflicts’***

Inter-value conflict = health versus indulgence >> “Look, if we are going to say [to the consumer] that we are going to become very healthy, then that goes against our [brand] positioning. [...] Because people prefer the taste of other things over vegetables, [although] they know it is good for them.”

#### ***Coding layer 2 ‘Response to inter-value conflict’:***

Value Reflexivity = asking feedback of dieticians >> “Previously we were talking with dieticians...”

Value Receptivity = broadened understanding with new aspects >> “So such a small cup makes it interesting [for them], because then they still consume 80 grams extra.”

Value Articulation = inconsistent >> ‘Health’ conflicts with their brand positioning, but still produce products particularly targeting health aspects. Additionally, this health aspect ‘vegetable intake’ is only used for one product for their foodservice channel, but not taken up in product innovation strategy for other products or other sales channels.



## 6.8 Appendix C (Chapter 4)

**Table S4.** Results of the CFA and the reliability analyses of the motive-related survey items.

<i>Motive categories</i>	<i>Items – Our firm is developing healthier products...</i>	<i>Stand. factor loading</i>
<i>Three category model</i>	$\chi^2$ : $p = 0.058$ ; TLI = 0.910; CFI = 0.948; RMSEA = 0.062	
<i>Instrumental motives</i>	1. ... because our shareholders/ investors/owners demand these improvements. 2. ... in order to protect or improve the reputation of the company. 3. ... in order to appease our shareholders/ investors/owners.	0.54 0.62 0.49
<i>Relational Motives</i>	4. ... in order to increase our customer base. 5. ... in order to differentiate us from our competitors. 6. ... because it is a source of sustained competitive advantage.	0.69 0.76 0.75
<i>Moral motives</i>	7. ... because we feel co-responsible for the health of our consumers. 8. ... because of genuine concern for public health. 9. ... because top management considers our impact on public health as a vital part of corporate strategy. 10. ... because it is the right thing to do.	0.81 0.69 0.51 0.74
<i>Two category model</i>	$\chi^2$ : $p = 0.005$ ; TLI = 0.845; CFI = 0.904; RMSEA = 0.082	
<i>Instrumental motives</i>	1. ... because our shareholders/ investors/owners demand these improvements. 2. ... in order to protect or improve the reputation of the company. 3. ... in order to appease our shareholders/ investors/owners. 4. ... in order to increase our customer base. 5. ... in order to differentiate us from our competitors. 6. ... because it is a source of sustained competitive advantage.	0.31 0.53 0.30 0.67 0.76 0.73
<i>Moral motives</i>	7. ... because we feel co-responsible for the health of our consumers. 8. ... because of genuine concern for public health. 9. ... because top management considers our impact on public health as a vital part of corporate strategy. 10. ... because it is the right thing to do.	0.80 0.70 0.50 0.75

**Table S4. (continued)** Results of the CFA and the reliability analyses of the motive-related survey items.

<b>Final model</b>	<b>X<sup>2</sup>: <math>p = 0.175</math>; <math>TLI = 0.951</math>; <math>CFI = 0.972</math>; <math>RMSEA = 0.046</math></b>	
<i>Instrumental motives</i>	2. ... in order to protect or improve the reputation of the company.	0.51
	4. ... in order to increase our customer base.	0.68
	5. ... in order to differentiate us from our competitors.	0.77
	6. ... because it is a source of sustained competitive advantage.	0.74
<i>Moral motives</i>	7. ... because we feel co-responsible for the health of our consumers.	0.80
	8. ... because of genuine concern for public health.	0.70
	9. ... because top management considers our impact on public health as a vital part of corporate strategy.	0.51
	10. ... because it is the right thing to do.	0.74
<i>Owner motives</i>	1. ... because our shareholders/ investors/owners demand these improvements.	0.59
	3. ... in order to appease our shareholders/ investors/owners.	0.74

6.9 Appendix D (Chapter 5)

Table S5. Standards of the Choices program per product category

<b>Product category</b>	<b>Stand. version</b>	<b>Energy</b> kcal/100g	<b>Added sugar</b> energy % g/100g	<b>Saturated fat</b> g/100g	<b>% total fat</b>	<b>energy %</b>	<b>Trans fat</b> energy %	<b>Fiber</b> g/100kcal	<b>Sodium</b> mg/100g	<b>mg/kcal</b>
<i>Bread products</i>	2007		13	1.4			0.14	1.3	500	
	2010		13	1.1			0.1	1.3	500	
<i>Butter &amp; margarines</i>	2007		0		30			1.3		1.6
	2010		0		30			1.3		
<i>Breakfast cereals</i>	2007			3.25	1.4		0.14	1.3	120	
	2010			20	3		0.1	1.3	500	
<i>Cheese products</i>	2007		0	15			0.14		900	
	2010		0	16					900	
<i>Condiments dinner</i>	2007	100		3.25	1.4		0.14		450	
	2010	100		2.5	1.1		0.1		450	
<i>Condiments emulsified</i>	2007	350	13			30		1.3	750	
	2010	350		11		30		1.3	750	
<i>Condiments water-base</i>	2007	100		1.4			0.14		750	
	2010	100		1.1			0.1		750	
<i>Dairy drinks</i>	2007			5	1.4		0.14		120	
	2010			5	1.3				100	
<i>Fish products</i>	2007			0		13	0.14		450	
	2010		0		30		0.1		450	
<i>Fruit juices</i>	2007			0	1.4		0.14	0.75	120	
	2010	50	0	1.1			0.1	0.75	100	

**Table S5.** (continued)

<b>Product category</b>	<b>Stand. version</b>	<b>Energy</b> kcal/100g	<b>Added sugar</b> % g/100g energy	<b>Saturated fat</b> g/100g % total fat	<b>Trans fat</b> energy % g/100g	<b>Fiber</b> energy % g/100kcal	<b>Sodium</b> mg/100g mg/kcal
<i>Fruit products</i>	2007		0	1.4	0.14	1.3	120
	2010		2.5	1.1	0.1	1.3	200
<i>Legumes</i>	2007		0	1.4	0.14	1.3	120
	2010		2.5	1.1	0.1	1.3	200
<i>Meat products</i>	2007		3.25		13		900
	2010		2.5		13		900
<i>Pasta &amp; noodles</i>	2007		0	1.4	0.14	1.3	120
	2010		0	1.1	0.1	1.3	100
<i>Potato products</i>	2007		0	1.4	0.14	1.3	120
	2010		0	1.1	0.1	1.3	100
<i>Rice</i>	2007		0	1.4	0.14	1.3	120
	2010		0	1.1	0.1	0.7	100
<i>Sandwiches</i>	2007		13		13	1.3	0.8
	2010		13		13	1.3	0.8
<i>Sandwich spreads</i>	2007		13		13	1.3	1.6
	2010		30		13	1.3	400
<i>Snacks</i>	2007		20		13	1.3	400
	2010		20		13	1.3	400
<i>Soft drinks</i>	2007		32	1.4	0.14		120
	2010		30	1.1	0.1		20
<i>Soups</i>	2007		100	3.25	0.14		350
	2010		100	2.5	0.1		350
<i>Vegetable products</i>	2007		0	1.4	0.14	1.3	120
	2010		2.5	1.1	0.1	1.3	200

## References

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- Adams, R., Bessant, J., & Phelps, R. (2006). Innovation management measurement: A review. *International Journal of Management Reviews*, 8(1), 21–47.
- Aguilera, R. V., Rupp, D. E., Williams, C. A., & Ganapathi, J. (2007). Putting the S back in corporate social responsibility: A multilevel theory of social change in organizations. *Academy of Management Review*, 32(3), 836–863.
- Aguinis, H., & Glavas, A. (2012). What We Know and Don't Know About Corporate Social Responsibility: A Review and Research Agenda. *Journal of Management*, 38(4), 932–968. <https://doi.org/10.1177/0149206311436079>
- Ahrne, G., & Brunsson, N. (2011). Organization outside organizations: the significance of partial organization. *Organization*, 18(1), 83–104. <https://doi.org/10.1177/1350508410376256>
- Alexander, K., Dhumale, R., & Eatwell, J. (2005). *Global Governance of Financial Systems*. <https://doi.org/10.1093/acprof:oso/9780195166989.001.0001>
- Apriliyanti, I. D., & Alon, I. (2017). Bibliometric analysis of absorptive capacity. *International Business Review*, 26(5), 896–907. <https://doi.org/10.1016/j.ibusrev.2017.02.007>
- Arbuckle, J. L. (2014). Amos (Version 23.0). Chicago: IBM SPSS.
- Armstrong, J. S., & Overton, T. S. (1977). Estimating Nonresponse Bias in Mail Surveys. *Journal of Marketing Research*, 14(3), 396–402. <https://doi.org/10.1177/002224377701400320>
- Athanasopoulou, A., & Selsky, J. W. (2015). The Social Context of Corporate Social Responsibility: Enriching Research With Multiple Perspectives and Multiple Levels. *Business & Society*, 54(3), 322–364. <https://doi.org/10.1177/0007650312449260>

- Bansal, P. (2003). From Issues to Actions: The Importance of Individual Concerns and Organizational Values in Responding to Natural Environmental Issues. *Organization Science*, 14(5), 510–527.  
<https://doi.org/10.1287/orsc.14.5.510.16765>
- Bansal, P. (2005). Evolving Sustainably: A Longitudinal Study of Corporate Sustainable Development. *Strategic Management Journal*, 26(3), 197–218.
- Bansal, P., & Roth, K. (2000). Why Companies Go Green: A Model of Ecological Responsiveness. *The Academy of Management Journal*, 43(4), 717–736.
- Bansal, P., & Song, H.-C. (2017). Similar But Not the Same: Differentiating Corporate Sustainability from Corporate Responsibility. *Academy of Management Annals*, 11(1), 105–149. <https://doi.org/10.5465/annals.2015.0095>
- Barber, L. (2019). New Agenda. *Financial Times*. Retrieved from <https://aboutus.ft.com/en-gb/new-agenda/>
- Basu, K., & Palazzo, G. (2008). Corporate Social Responsibility: A Process Model of Sensemaking. *Academy of Management Review*, 33(1), 122–136.  
<https://doi.org/10.5465/AMR.2008.27745504>
- Battilana, J., & Lee, M. (2014). Advancing Research on Hybrid Organizing – Insights from the Study of Social Enterprises. *The Academy of Management Annals*, 8(1), 397–441. <https://doi.org/10.1080/19416520.2014.893615>
- Baumann-Pauly, D., Wickert, C., Spence, L. J., & Scherer, A. G. (2013). Organizing Corporate Social Responsibility in Small and Large Firms: Size Matters. *Journal of Business Ethics*, 115(4), 693–705. <https://doi.org/10.1007/s10551-013-1827-7>
- Bessant, J. (2013). 1. Innovation in the Twenty-First Century. In R. Owen, J. R. Bessant, & M. Heintz (Eds.), *Responsible innovation: managing the responsible emergence of science and innovation in society* (pp. 27–50). Chichester, West Sussex: John Wiley & Sons Inc.
- Biemann, T., Cole, M. S., & Voelpel, S. (2012). Within-group agreement: On the use (and misuse) of rWG and rWG(J) in leadership research and some best practice guidelines. *The Leadership Quarterly*, 23(1), 66–80.  
<https://doi.org/10.1016/j.leaqua.2011.11.006>
- Blok, V. (2014). Look who's talking: responsible innovation, the paradox of dialogue and the voice of the other in communication and negotiation processes. *Journal*

- of Responsible Innovation*, 1(2), 171–190.  
<https://doi.org/10.1080/23299460.2014.924239>
- Blok, V., Hoffmans, L., & Wubben, E. F. M. (2015). Stakeholder engagement for responsible innovation in the private sector: critical issues and management practices. *Journal on Chain and Network Science*, 15(2), 147–164.  
<https://doi.org/10.3920/JCNS2015.x003>
- Blok, V., & Lemmens, P. (2015). The Emerging Concept of Responsible Innovation. Three Reasons Why It Is Questionable and Calls for a Radical Transformation of the Concept of Innovation. In B.-J. Koops, I. Oosterlaken, H. Romijn, T. Swierstra, & J. Van den Hoven (Eds.), *Responsible Innovation 2* (pp. 19–35). Retrieved from [http://link.springer.com/10.1007/978-3-319-17308-5\\_2](http://link.springer.com/10.1007/978-3-319-17308-5_2)
- Blok, V., Tempels, T., Pietersma, E., & Jansen, L. (forthcoming). Exploring Ethical Decision Making in Responsible Innovation: The case of innovations for healthy food. In J. Van den Hoven, N. Doorn, T. Swierstra, B.-J. Koops, & H. Romijn (Eds.), *Responsible Innovation 3*. Dordrecht: Springer.
- Botzem, S., & Dobusch, L. (2012). Standardization Cycles: A Process Perspective on the Formation and Diffusion of Transnational Standards. *Organization Studies*, 33(5–6), 737–762. <https://doi.org/10.1177/0170840612443626>
- Bowen, H. R. (1953). *Social Responsibilities of the Businessman*.  
<https://doi.org/10.2307/j.ctt20q1w8f>
- Brand, T., & Blok, V. (2019). Responsible innovation in business: a critical reflection on deliberative engagement as a central governance mechanism. *Journal of Responsible Innovation*, 1–21.  
<https://doi.org/10.1080/23299460.2019.1575681>
- Brønn, P. S., & Vidaver-Cohen, D. (2009). Corporate Motives for Social Initiative: Legitimacy, Sustainability, or the Bottom Line? *Journal of Business Ethics*, 87(S1), 91–109. <https://doi.org/10.1007/s10551-008-9795-z>
- Brunsson, N., Rasche, A., & Seidl, D. (2012). The Dynamics of Standardization: Three Perspectives on Standards in Organization Studies. *Organization Studies*, 33(5–6), 613–632. <https://doi.org/10.1177/0170840612450120>
- Bundy, J., Shropshire, C., & Buchholtz, A. K. (2013). Strategic Cognition and Issue Salience: Toward an Explanation of Firm Responsiveness to Stakeholder

- Concerns. *Academy of Management Review*, 38(3), 352–376.  
<https://doi.org/10.5465/amr.2011.0179>
- Bundy, J., Vogel, R. M., & Zachary, M. A. (2018). Organization-stakeholder fit: A dynamic theory of cooperation, compromise, and conflict between an organization and its stakeholders. *Strategic Management Journal*, 39(2), 476–501. <https://doi.org/10.1002/smj.2736>
- Burchell, J., & Cook, J. (2013). Sleeping with the Enemy? Strategic Transformations in Business–NGO Relationships Through Stakeholder Dialogue. *Journal of Business Ethics*, 113(3), 505–518. <https://doi.org/10.1007/s10551-012-1319-1>
- Burget, M., Bardone, E., & Pedaste, M. (2017). Definitions and Conceptual Dimensions of Responsible Research and Innovation: A Literature Review. *Science and Engineering Ethics*, 23(1), 1–19. <https://doi.org/10.1007/s11948-016-9782-1>
- Busch, T. (2011). Organizational adaptation to disruptions in the natural environment: The case of climate change. *Scandinavian Journal of Management*, 27(4), 389–404. <https://doi.org/10.1016/j.scaman.2010.12.010>
- Business Roundtable. (2019, August 19). Business Roundtable Redefines the Purpose of a Corporation to Promote ‘An Economy That Serves All Americans.’ Retrieved from <https://www.businessroundtable.org/business-roundtable-redefines-the-purpose-of-a-corporation-to-promote-an-economy-that-serves-all-americans>
- Buttriss, J. L. (2013). Food reformulation: the challenges to the food industry. *Proceedings of the Nutrition Society*, 72(01), 61–69.  
<https://doi.org/10.1017/S0029665112002868>
- Calvo-Lerma, J., Crespo-Escobar, P., Martínez-Barona, S., Fornés-Ferrer, V., Donat, E., & Ribes-Koninckx, C. (2019). Differences in the macronutrient and dietary fibre profile of gluten-free products as compared to their gluten-containing counterparts. *European Journal of Clinical Nutrition*, 73(6), 930–936.  
<https://doi.org/10.1038/s41430-018-0385-6>
- Carroll, A. B. (1979). A Three-Dimensional Conceptual Model of Corporate Performance. *Academy of Management Review*, 4(4), 497–505.  
<https://doi.org/10.5465/AMR.1979.4498296>



- Carroll, A. B. (2008). A history of Corporate Social Responsibility – concepts and practices. In A. Crane, A. McWilliams, D. Matten, J. Moon, & D. S. Siegel (Eds.), *The Oxford handbook of corporate social responsibility*. Oxford ; New York: Oxford University Press Inc.
- Carroll, A. B., & Shabana, K. M. (2010). The Business Case for Corporate Social Responsibility: A Review of Concepts, Research and Practice. *International Journal of Management Reviews*, 12(1), 85–105.  
<https://doi.org/10.1111/j.1468-2370.2009.00275.x>
- Carroll, R. J., Primo, D. M., & Richter, B. K. (2016). Using item response theory to improve measurement in strategic management research: An application to corporate social responsibility: An Application to Corporate Social Responsibility. *Strategic Management Journal*, 37(1), 66–85.  
<https://doi.org/10.1002/smj.2463>
- Chesbrough, H. W. (2006). *Open innovation: the new imperative for creating and profiting from technology*. Boston, Mass: Harvard Business School Press.
- Clarkson, M. B. E. (1995). A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance. *The Academy of Management Review*, 20(1), 92–117. <https://doi.org/10.2307/258888>
- Coenen, L., Benneworth, P., & Truffer, B. (2012). Toward a spatial perspective on sustainability transitions. *Research Policy*, 41(6), 968–979.  
<https://doi.org/10.1016/j.respol.2012.02.014>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed). Hillsdale, N.J: L. Erlbaum Associates.
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35(1), 128–152.  
<https://doi.org/10.2307/2393553>
- Cooper, R., Edgett, S., & Kleinschmidt, E. (2001). Portfolio management for new product development: results of an industry practices study. *R and D Management*, 31(4), 361–380. <https://doi.org/10.1111/1467-9310.00225>
- Crane, A., & Matten, D. (2007). 2. Framing Business Ethics. In *Business ethics: managing corporate citizenship and sustainability in the age of globalization* (2nd ed). Oxford ; New York: Oxford University Press.

- Crane, A., Palazzo, G., Spence, L. J., & Matten, D. (2014). Contesting the Value of “Creating Shared Value.” *California Management Review*, 56(2), 130–153.  
<https://doi.org/10.1525/cmr.2014.56.2.130>
- Crilly, D., Hansen, M., & Zollo, M. (2016). The Grammar of Decoupling: A Cognitive-Linguistic Perspective on Firms’ Sustainability Claims and Stakeholders’ Interpretation. *Academy of Management Journal*, 59(2), 705–729.  
<https://doi.org/10.5465/amj.2015.0171>
- Crilly, D., Zollo, M., & Hansen, M. (2012). Faking It or Muddling Through? Understanding Decoupling in Response to Stakeholder Pressures. *Academy of Management Journal*, 55(6), 1429–1448.  
<https://doi.org/10.5465/amj.2010.0697>
- Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin*, 52(4), 281–302. <https://doi.org/10.1037/h0040957>
- Cummings, M. L. (2006). Integrating ethics in design through the value-sensitive design approach. *Science and Engineering Ethics*, 12(4), 701–715.  
<https://doi.org/10.1007/s11948-006-0065-0>
- Davis, K. (1973). The Case for and against Business Assumption of Social Responsibilities. *The Academy of Management Journal*, 16(2), 312–322.  
<https://doi.org/10.2307/255331>
- den Hond, F., & de Bakker, F. G. A. (2007). Ideologically Motivated Activism: How Activist Groups Influence Corporate Social Change Activities. *Academy of Management Review*, 32(3), 901–924.  
<https://doi.org/10.5465/AMR.2007.25275682>
- Diepenbrock, F. (2005, September 10). Logo drijft voedingsmiddelenbranche uiteen. *Het Financieele Dagblad*. Retrieved from  
<https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:4H2P-FG40-00MN-13X7-00000-00&context=1516831>.
- Dignum, M., Correljé, A., Cuppen, E., Pesch, U., & Taebi, B. (2015). Contested Technologies and Design for Values: The Case of Shale Gas. *Science and Engineering Ethics*. <https://doi.org/10.1007/s11948-015-9685-6>

- Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review*, 20(1), 65–91.
- Doorn, N. (2012a). Exploring Responsibility Rationales in Research and Development (R&D). *Science, Technology & Human Values*, 37(3), 180–209.  
<https://doi.org/10.1177/0162243911405344>
- Doorn, N. (2012b). Responsibility Ascriptions in Technology Development and Engineering: Three Perspectives. *Science and Engineering Ethics*, 18(1), 69–90.  
<https://doi.org/10.1007/s11948-009-9189-3>
- Durand, R., & McGuire, J. (2005). Legitimizing Agencies in the Face of Selection: The Case of AACSB. *Organization Studies*, 26(2), 165–196.  
<https://doi.org/10.1177/0170840605049465>
- Dutch Choices Foundation. (2010). *Opzet implementatie herziene productcriteria IKB in NL*. Den Haag.
- Dutch Choices Foundation. (2015). *Invoerprocedure nieuwe productcriteria 2015*. Den Haag.
- Dutch Choices Foundation. (2018a, August 31). Stichting Ik Kies Bewust wordt opgeheven. Retrieved from  
<https://www.hetvinkje.nl/nieuws/actueel/stichting-ik-kies-bewust-wordt-opgeheven/>
- Dutch Choices Foundation. (2018b, October). WETENSCHAPPELIJKE COMMISSIE. Retrieved from  
<https://www.hetvinkje.nl/organisatie/wetenschap/>
- Eckel, R. H., Borra, S., Lichtenstein, A. H., & Yin-Piazza, S. Y. (2007). Understanding the Complexity of Trans Fatty Acid Reduction in the American Diet: American Heart Association Trans Fat Conference 2006: Report of the Trans Fat Conference Planning Group. *Circulation*, 115(16), 2231–2246.  
<https://doi.org/10.1161/CIRCULATIONAHA.106.181947>
- Egyedi, T. M., & Blind, K. (Eds.). (2008). *The dynamics of standards*. Cheltenham: Edward Elgar.

- Eisenhardt, K. M., Graebner, M. E., & Sonenshein, S. (2016). Grand Challenges and Inductive Methods: Rigor without Rigor Mortis. *Academy of Management Journal*, 59(4), 1113–1123. <https://doi.org/10.5465/amj.2016.4004>
- El Akremi, A., Gond, J.-P., Swaen, V., De Roeck, K., & Igalens, J. (2018). How Do Employees Perceive Corporate Responsibility? Development and Validation of a Multidimensional Corporate Stakeholder Responsibility Scale. *Journal of Management*, 44(2), 619–657. <https://doi.org/10.1177/0149206315569311>
- European Commission. (2015). *REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL regarding trans fats in foods and in the overall diet of the Union population* (No. COM(2015) 619 final). Retrieved from [https://ec.europa.eu/food/sites/food/files/safety/docs/fs\\_labelling-nutrition\\_trans-fats-report\\_en.pdf](https://ec.europa.eu/food/sites/food/files/safety/docs/fs_labelling-nutrition_trans-fats-report_en.pdf)
- European Commission. COMMISSION REGULATION (EU) 2019/649. , Pub. L. No. 2019/649, Official Journal of the European Union (2019).
- Ferraro, F., Etzion, D., & Gehman, J. (2015). Tackling Grand Challenges Pragmatically: Robust Action Revisited. *Organization Studies*, 36(3), 363–390. <https://doi.org/10.1177/0170840614563742>
- Field, A. P. (2013). *Discovering statistics using IBM SPSS statistics* (4th edition). Los Angeles: Sage.
- Fisher, E., Mahajan, R. L., & Mitcham, C. (2006). Midstream Modulation of Technology: Governance From Within. *Bulletin of Science, Technology & Society*, 26(6), 485–496. <https://doi.org/10.1177/0270467606295402>
- Flanagan, M., Howe, D. C., & Nissenbaum, H. (2008). Embodying Values in Technology: Theory and Practice. In J. van den Hoven & J. Weckert (Eds.), *Information Technology and Moral Philosophy* (pp. 322–353). <https://doi.org/10.1017/CBO9780511498725.017>
- Flatten, T. C., Engelen, A., Zahra, S. A., & Brettel, M. (2011). A measure of absorptive capacity: Scale development and validation. *European Management Journal*, 29(2), 98–116. <https://doi.org/10.1016/j.emj.2010.11.002>

- Forsman, H. (2011). Innovation capacity and innovation development in small enterprises. A comparison between the manufacturing and service sectors. *Research Policy*, 40(5), 739–750. <https://doi.org/10.1016/j.respol.2011.02.003>
- Fransen, L. W., & Kolk, A. (2007). Global Rule-Setting for Business: A Critical Analysis of Multi-Stakeholder Standards. *Organization*, 14(5), 667–684. <https://doi.org/10.1177/1350508407080305>
- Frey, B. S., & Jegen, R. (2001). Motivation crowding theory. *Journal of Economic Surveys*, 15(5), 589–611.
- Friedman, B., Kahn, P. H., Jr., & Borning, A. (2002). *Value Sensitive Design: Theory and Methods*. Retrieved from <ftp://ftp.cs.washington.edu/tr/2002/12/UW-CSE-02-12-01.pdf>
- Friedman, M. (1970, September 13). The Social Responsibility of Business is to Increase its Profits. *The New York Times Magazine*, pp. 32–33, 122, 126.
- Friedman, M., & Friedman, R. D. (1982). *Capitalism and freedom*. Chicago: University of Chicago Press.
- Gardberg, N. A., & Fombrun, C. J. (2006). Corporate Citizenship: Creating Intangible Assets across Institutional Environments. *The Academy of Management Review*, 31(2), 329–346. <https://doi.org/10.2307/20159205>
- Garriga, E., & Melé, D. (2004). Corporate social responsibility theories: Mapping the territory. *Journal of Business Ethics*, 53(1), 51–71.
- Garst, J., Blok, V., Branzei, O., Jansen, L., & Omta, O. S. W. F. (2019). Toward a Value-Sensitive Absorptive Capacity Framework: Navigating Intervalue and Intravalue Conflicts to Answer the Societal Call for Health. *Business & Society*, 000765031987610. <https://doi.org/10.1177/0007650319876108>
- Garst, J., Blok, V., Jansen, L., & Omta, O. (2017). Responsibility versus Profit: The Motives of Food Firms for Healthy Product Innovation. *Sustainability*, 9(12), 2286. <https://doi.org/10.3390/su9122286>
- Geels, F. W. (2004). From sectoral systems of innovation to socio-technical systems. *Research Policy*, 33(6–7), 897–920. <https://doi.org/10.1016/j.respol.2004.01.015>

- Geels, F. W. (2011). The multi-level perspective on sustainability transitions: Responses to seven criticisms. *Environmental Innovation and Societal Transitions*, 1(1), 24–40. <https://doi.org/10.1016/j.eist.2011.02.002>
- Gehman, J., Treviño, L. K., & Garud, R. (2013). Values Work: A Process Study of the Emergence and Performance of Organizational Values Practices. *Academy of Management Journal*, 56(1), 84–112. <https://doi.org/10.5465/amj.2010.0628>
- Gintis, H. (2000). Beyond Homo economicus: evidence from experimental economics. *Ecological Economics*, 35(3), 311–322. [https://doi.org/10.1016/S0921-8009\(00\)00216-0](https://doi.org/10.1016/S0921-8009(00)00216-0)
- Graafland, J., & Mazereeuw, C. (2012). Motives for Corporate Social Responsibility. *De Economist*, 160(4), 377–396. <https://doi.org/10.1007/s10645-012-9198-5>
- Guston, D. H. (2008). Innovation policy: not just a jumbo shrimp. *Nature*, 454(7207), 940–941. <https://doi.org/10.1038/454940a>
- Haack, P., Schoeneborn, D., & Wickert, C. (2012). Talking the Talk, Moral Entrapment, Creeping Commitment? Exploring Narrative Dynamics in Corporate Responsibility Standardization. *Organization Studies*, 33(5–6), 815–845. <https://doi.org/10.1177/0170840612443630>
- Haen, D., Sneijder, P., Te Molder, H., & Swierstra, T. (2015). Natural Food: Organizing 'Responsiveness' in Responsible Innovation of Food Technology. In B.-J. Koops, I. Oosterlaken, H. Romijn, T. Swierstra, & J. Van den Hoven (Eds.), *Responsible Innovation 2* (pp. 161–181). Retrieved from <http://link.springer.com/10.1007/978-3-319-17308-5>
- Hahn, T. (2015). Reciprocal Stakeholder Behavior: A Motive-Based Approach to the Implementation of Normative Stakeholder Demands. *Business & Society*, 54(1), 9–51. <https://doi.org/10.1177/0007650312439029>
- Hahn, T., & Albert, N. (2017). Strong Reciprocity in Consumer Boycotts. *Journal of Business Ethics*, 145(3), 509–524. <https://doi.org/10.1007/s10551-015-2870-3>
- Hahn, T., Figge, F., Pinkse, J., & Preuss, L. (2010). Trade-offs in corporate sustainability: you can't have your cake and eat it: Trade-Offs in Corporate Sustainability: You Can't Have Your Cake and Eat It. *Business Strategy and the Environment*, 19(4), 217–229. <https://doi.org/10.1002/bse.674>

- Hahn, T., Kolk, A., & Winn, M. (2010). A New Future for Business? Rethinking Management Theory and Business Strategy. *Business & Society*, 49(3), 385–401. <https://doi.org/10.1177/0007650310371357>
- Hahn, T., Pinkse, J., Preuss, L., & Figge, F. (2016). Ambidexterity for Corporate Social Performance. *Organization Studies*, 37(2), 213–235. <https://doi.org/10.1177/0170840615604506>
- Hahn, T., Preuss, L., Pinkse, J., & Figge, F. (2014). Cognitive Frames in Corporate Sustainability: Managerial Sensemaking with Paradoxical and Business Case Frames. *Academy of Management Review*, 39(4), 463–487. <https://doi.org/10.5465/amr.2012.0341>
- Halilem, N., Amara, N., Olmos-Peñuela, J., & Mohiuddin, M. (2017). “To Own, or not to Own?” A multilevel analysis of intellectual property right policies’ on academic entrepreneurship. *Research Policy*, 46(8), 1479–1489. <https://doi.org/10.1016/j.respol.2017.07.002>
- Hallström, K. T., & Boström, M. (2010). *Transnational multi-stakeholder standardization: organizing fragile non-state authority*. Cheltenham, UK ; Northampton, MA: Edward Elgar Publishing.
- Hamann, R., Smith, J., Tashman, P., & Marshall, R. S. (2017). Why Do SMEs Go Green? An Analysis of Wine Firms in South Africa. *Business & Society*, 56(1), 23–56. <https://doi.org/10.1177/0007650315575106>
- Hanseth, O., & Bygstad, B. (2015). Flexible generification: ICT standardization strategies and service innovation in health care. *European Journal of Information Systems*, 24(6), 645–663. <https://doi.org/10.1057/ejis.2015.1>
- Hart, S. L. (1995). A Natural-Resource-Based View of the Firm. *Academy of Management Review*, 20(4), 986–1014. <https://doi.org/10.5465/amr.1995.9512280033>
- Hasnas, J. (1998). The Normative Theories of Business Ethics: A Guide for the Perplexed. *Business Ethics Quarterly*, 8(1), 19. <https://doi.org/10.2307/3857520>
- Hawkes, C., Jewell, J., & Allen, K. (2013). A food policy package for healthy diets and the prevention of obesity and diet-related non-communicable diseases: the NOURISHING framework. *Obesity Reviews: An Official Journal of the*

- International Association for the Study of Obesity*, 14 Suppl 2, 159–168.  
<https://doi.org/10.1111/obr.12098>
- Hawn, O., & Ioannou, I. (2016). Mind the gap: The interplay between external and internal actions in the case of corporate social responsibility: Mind the Gap: External and Internal Actions. *Strategic Management Journal*, 37(13), 2569–2588. <https://doi.org/10.1002/smj.2464>
- Hemingway, C. A., & MacLagan, P. W. (2004). Managers' personal values as drivers of corporate social responsibility. *Journal of Business Ethics*, 50(1), 33–44.
- Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H., & McElreath, R. (2001). In search of homo economicus: behavioral experiments in 15 small-scale societies. *American Economic Review*, 91(2), 73–78.
- Heras-Saizarbitoria, I., & Boiral, O. (2013). ISO 9001 and ISO 14001: Towards a Research Agenda on Management System Standards\*: Research Agenda on Management System Standards. *International Journal of Management Reviews*, 15(1), 47–65. <https://doi.org/10.1111/j.1468-2370.2012.00334.x>
- Hinkin, T. R. (1995). A Review of Scale Development Practices in the Study of Organizations. *Journal of Management*, 21(5), 967–988.  
<https://doi.org/10.1177/014920639502100509>
- Hinkin, T. R. (1998). A Brief Tutorial on the Development of Measures for Use in Survey Questionnaires. *Organizational Research Methods*, 1(1), 104–121.  
<https://doi.org/10.1177/109442819800100106>
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55.  
<https://doi.org/10.1080/10705519909540118>
- Huizingh, E. K. R. E. (2011). Open innovation: State of the art and future perspectives. *Technovation*, 31(1), 2–9.  
<https://doi.org/10.1016/j.technovation.2010.10.002>
- Hülse, R., & Kerwer, D. (2007). Global Standards in Action: Insights from Anti-Money Laundering Regulation. *Organization*, 14(5), 625–642.  
<https://doi.org/10.1177/1350508407080311>



- IBM Corp. (2015). IBM SPSS Statistics for Windows (Version 23.0). Armonk, NY: IBM Corp.
- James, L. R., Demaree, R. G., & Wolf, G. (1993).  $r$ -sub(wg): An assessment of within-group interrater agreement. *Journal of Applied Psychology*, 78(2), 306–309. <https://doi.org/10.1037/0021-9010.78.2.306>
- Jansen, J. J. P., Van Den Bosch, F. A. J., & Volberda, H. W. (2005). Managing Potential and Realized Absorptive Capacity: How Do Organizational Antecedents Matter? *The Academy of Management Journal*, 48(6), 999–1015. <https://doi.org/10.2307/20159726>
- Knai, C., Petticrew, M., Durand, M. A., Eastmure, E., James, L., Mehrotra, A., ... Mays, N. (2015). Has a public–private partnership resulted in action on healthier diets in England? An analysis of the Public Health Responsibility Deal food pledges. *Food Policy*, 54, 1–10. <https://doi.org/10.1016/j.foodpol.2015.04.002>
- Kourula, A., & Laasonen, S. (2010). Nongovernmental Organizations in Business and Society, Management, and International Business Research: Review and Implications From 1998 to 2007. *Business & Society*, 49(1), 35–67. <https://doi.org/10.1177/0007650309345282>
- Kourula, A., Moon, J., Salles-Djelic, M.-L., & Wickert, C. (2019). New Roles of Government in the Governance of Business Conduct: Implications for Management and Organizational Research. *Organization Studies*, 017084061985214. <https://doi.org/10.1177/0170840619852142>
- Krefting, L. (1991). Rigor in qualitative research: the assessment of trustworthiness. *The American Journal of Occupational Therapy: Official Publication of the American Occupational Therapy Association*, 45(3), 214–222.
- Kurucz, E. C., Colbert, B. A., & Wheeler, D. (2008). The business case for Corporate Social Responsibility. In A. Crane, A. McWilliams, D. Matten, J. Moon, & D. S. Siegel (Eds.), *The Oxford handbook of corporate social responsibility*. Oxford ; New York: Oxford University Press Inc.
- Lane, P. J., Koka, B. R., & Pathak, S. (2006). The reification of absorptive capacity: A critical review and rejuvenation of the construct. *Academy of Management Review*, 31(4), 833–863.

- Laufer, W. S. (2003). Social Accountability and Corporate Greenwashing. *Journal of Business Ethics*, 43(3), 253–261. <https://doi.org/10.1023/A:1022962719299>
- Laursen, K., & Salter, A. (2006). Open for innovation: the role of openness in explaining innovation performance among U.K. manufacturing firms. *Strategic Management Journal*, 27(2), 131–150. <https://doi.org/10.1002/smj.507>
- LeBreton, J. M., & Senter, J. L. (2008). Answers to 20 Questions About Interrater Reliability and Interrater Agreement. *Organizational Research Methods*, 11(4), 815–852. <https://doi.org/10.1177/1094428106296642>
- Lewin, A. Y., Massini, S., & Peeters, C. (2011). Microfoundations of Internal and External Absorptive Capacity Routines. *Organization Science*, 22(1), 81–98.
- LexisNexis. (2017). *Nexis Uni*. Colorado Springs, CO: LexisNexis.
- Leyland, A. H. (2004). *A review of multilevel modelling in SPSS*. Retrieved from University of Glasgow website:  
<http://www.bristol.ac.uk/cmm/learning/mmssoftware/spss.html>
- Lindner, R., Kuhlmann, S., Randles, S., Bedsted, B., Gorgoni, G., Griessler, E., ... Mejlgaard, N. (Eds.). (2016). *Navigating Towards Shared Responsibility in Research and Innovation – Approach, Process and Results of the Res-AGorA Project*. Retrieved from [www.res-agera.eu](http://www.res-agera.eu)
- Long, T. B., & Blok, V. (2018). Integrating the management of socio-ethical factors into industry innovation: towards a concept of Open Innovation 2.0. *International Food and Agribusiness Management Review*, 21(4), 463–486. <https://doi.org/10.22434/IFAMR2017.0040>
- Lowik, S., Kraaijenbrink, J., & Groen, A. (2016). The team absorptive capacity triad: a configurational study of individual, enabling, and motivating factors. *Journal of Knowledge Management*, 20(5), 1083–1103. <https://doi.org/10.1108/JKM-11-2015-0433>
- Lubberink, R., Blok, V., van Ophem, J., & Omta, O. (2017a). Lessons for Responsible Innovation in the Business Context: A Systematic Literature Review of Responsible, Social and Sustainable Innovation Practices. *Sustainability*, 9(5), 721. <https://doi.org/10.3390/su9050721>
- Lubberink, R., Blok, V., van Ophem, J., & Omta, O. S. W. F. (2017b). A framework for Responsible Innovation in the business context: Lessons from Responsible-,

- Social- and Sustainable Innovation. In L. Asveld, R. Van Dam-Mieras, T. Swierstra, S. Lavrijssen, K. Linse, & J. Van den Hoven (Eds.), *Responsible innovation 3: a European agenda?* (pp. 181–207). Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=1610143>
- Lubberink, R., Blok, V., van Ophem, J., van der Velde, G., & Omta, O. (2018). Innovation for Society: Towards a Typology of Developing Innovations by Social Entrepreneurs. *Journal of Social Entrepreneurship*, 9(1), 52–78. <https://doi.org/10.1080/19420676.2017.1410212>
- Lyon, T. P., Delmas, M. A., Maxwell, J. W., Bansal, P. (Tima), Chiroleu-Assouline, M., Crifo, P., ... Wijen, F. (2018). CSR Needs CPR: Corporate Sustainability and Politics. *California Management Review*, 60(4), 5–24. <https://doi.org/10.1177/0008125618778854>
- Lyon, T. P., & Montgomery, A. W. (2015). The Means and End of Greenwash. *Organization & Environment*, 28(2), 223–249. <https://doi.org/10.1177/1086026615575332>
- Maas, K., Schaltegger, S., & Crutzen, N. (2016). Integrating corporate sustainability assessment, management accounting, control, and reporting. *Journal of Cleaner Production*, 136, 237–248. <https://doi.org/10.1016/j.jclepro.2016.05.008>
- Macnaghten, P., Owen, R., Stilgoe, J., Wynne, B., Azevedo, A., de Campos, A., ... Velho, L. (2014). Responsible innovation across borders: tensions, paradoxes and possibilities. *Journal of Responsible Innovation*, 1(2), 191–199. <https://doi.org/10.1080/23299460.2014.922249>
- Magnusson, R. S., & Patterson, D. (2014). The role of law and governance reform in the global response to non-communicable diseases. *Globalization and Health*, 10(1), 44. <https://doi.org/10.1186/1744-8603-10-44>
- Maloni, M. J., & Brown, M. E. (2006). Corporate Social Responsibility in the Supply Chain: An Application in the Food Industry. *Journal of Business Ethics*, 68(1), 35–52. <https://doi.org/10.1007/s10551-006-9038-0>
- Manders, B., de Vries, H. J., & Blind, K. (2016). ISO 9001 and product innovation: A literature review and research framework. *Technovation*, 48–49, 41–55. <https://doi.org/10.1016/j.technovation.2015.11.004>

- Manders-Huits, N. (2011). What Values in Design? The Challenge of Incorporating Moral Values into Design. *Science and Engineering Ethics*, 17(2), 271–287. <https://doi.org/10.1007/s11948-010-9198-2>
- Margolis, J. D., & Walsh, J. P. (2001). *People and profits?: The search for a link between a company's social and financial performance*. Psychology Press.
- Matten, D., & Crane, A. (2005). Corporate Citizenship: Toward an Extended Theoretical Conceptualization. *Academy of Management Review*, 30(1), 166–179. <https://doi.org/10.5465/AMR.2005.15281448>
- Matten, D., Crane, A., & Moon, J. (2007). Corporate Responsibility for Innovation — A Citizenship Framework. In G. Hanekamp & F. Wütscher (Eds.), *Business Ethics of Innovation* (pp. 63–87). [https://doi.org/10.1007/978-3-540-72310-3\\_5](https://doi.org/10.1007/978-3-540-72310-3_5)
- Mayntz, R. (2010). *Legitimacy and compliance in transnational governance*.
- Mena, S., & Palazzo, G. (2012). Input and Output Legitimacy of Multi-Stakeholder Initiatives. *Business Ethics Quarterly*, 22(3), 527–556. <https://doi.org/10.5840/beq201222333>
- Mensink, R. P., & Katan, M. B. (1990). Effect of Dietary trans Fatty Acids on High-Density and Low-Density Lipoprotein Cholesterol Levels in Healthy Subjects. *New England Journal of Medicine*, 323(7), 439–445. <https://doi.org/10.1056/NEJM199008163230703>
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: an expanded sourcebook* (2nd ed). Thousand Oaks: Sage Publications.
- Miska, C., Stahl, G. K., & Fuchs, M. (2018). The Moderating Role of Context in Determining Unethical Managerial Behavior: A Case Survey. *Journal of Business Ethics*, 153(3), 793–812. <https://doi.org/10.1007/s10551-016-3374-5>
- Moog, S., Spicer, A., & Böhm, S. (2015). The Politics of Multi-Stakeholder Initiatives: The Crisis of the Forest Stewardship Council. *Journal of Business Ethics*, 128(3), 469–493. <https://doi.org/10.1007/s10551-013-2033-3>
- Nestle, M. (2007). *Food politics: how the food industry influences nutrition and health* (Rev. and expanded ed). Berkeley: University of California Press.
- Nissenbaum, H. (2005). Values in technical design. In C. Mitcham (Ed.), *Encyclopedia of science, technology, and ethics* (pp. lxvi–lxx). New York, NY: Macmillan.

- Nonaka, I. (1994). A Dynamic Theory of Organizational Knowledge Creation. *Organization Science*, 5(1), 14–37.
- Nooteboom, B., Van Haverbeke, W., Duysters, G., Gilsing, V., & van den Oord, A. (2007). Optimal cognitive distance and absorptive capacity. *Research Policy*, 36(7), 1016–1034. <https://doi.org/10.1016/j.respol.2007.04.003>
- Omta, S. W. F., & Folstar, P. (2005). Integration of innovation in the corporate strategy of agri-food companies. In W. M. F. Jongen & M. T. G. Meulenbergh (Eds.), *Innovation in Agri-Food systems; product quality and consumer acceptance* (pp. 221–243). Wageningen: Wageningen Academic Publishers.
- Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate Social and Financial Performance: A Meta-Analysis. *Organization Studies*, 24(3), 403–441. <https://doi.org/10.1177/0170840603024003910>
- Ortiz-de-Mandojana, N., & Bansal, P. (2016). The long-term benefits of organizational resilience through sustainable business practices: The Long-Term Benefits of Sustainable Business Practices. *Strategic Management Journal*, 37(8), 1615–1631. <https://doi.org/10.1002/smj.2410>
- Owen, R., Macnaghten, P., & Stilgoe, J. (2012). Responsible research and innovation: From science in society to science for society, with society. *Science and Public Policy*, 39(6), 751–760. <https://doi.org/10.1093/scipol/scs093>
- Owen, R., Stilgoe, J., Macnaghten, P., Gorman, M., Fisher, E., & Guston, D. (2013). 2. A Framework for Responsible Innovation. In R. Owen, J. R. Bessant, & M. Heintz (Eds.), *Responsible innovation: managing the responsible emergence of science and innovation in society* (pp. 27–50). Chichester, West Sussex: John Wiley & Sons Inc.
- Pache, A.-C., & Santos, F. (2013). Inside the Hybrid Organization: Selective Coupling as a Response to Competing Institutional Logics. *Academy of Management Journal*, 56(4), 972–1001. <https://doi.org/10.5465/amj.2011.0405>
- Patel, P. C., Kohtamäki, M., Parida, V., & Wincent, J. (2015). Entrepreneurial orientation-as-experimentation and firm performance: The enabling role of absorptive capacity: Entrepreneurial Orientation-as-experimentation and Firm Performance. *Strategic Management Journal*, 36(11), 1739–1749. <https://doi.org/10.1002/smj.2310>

- Paulraj, A., Chen, I. J., & Blome, C. (2017). Motives and Performance Outcomes of Sustainable Supply Chain Management Practices: A Multi-theoretical Perspective. *Journal of Business Ethics*, 145(2), 239–258.  
<https://doi.org/10.1007/s10551-015-2857-0>
- Pinckaers, M. (2016). *The Dutch Food Retail Market* (No. NL6037). The Hague: USDA Foreign Agricultural Service.
- Pinkse, J., & Kolk, A. (2010). Challenges and trade-offs in corporate innovation for climate change. *Business Strategy and the Environment*, n/a-n/a.  
<https://doi.org/10.1002/bse.677>
- Pinkse, J., Kuss, M. J., & Hoffmann, V. H. (2010). On the implementation of a ‘global’ environmental strategy: The role of absorptive capacity. *International Business Review*, 19(2), 160–177. <https://doi.org/10.1016/j.ibusrev.2009.11.005>
- Plambeck, N., & Weber, K. (2009). CEO Ambivalence and Responses to Strategic Issues. *Organization Science*, 20(6), 993–1010.  
<https://doi.org/10.1287/orsc.1090.0471>
- Pratt, M. G. (2008). Fitting Oval Pegs Into Round Holes: Tensions in Evaluating and Publishing Qualitative Research in Top-Tier North American Journals. *Organizational Research Methods*, 11(3), 481–509.  
<https://doi.org/10.1177/1094428107303349>
- Pratt, M. G. (2009). From the Editors: For the Lack of a Boilerplate: Tips on Writing up (And Reviewing) Qualitative Research. *The Academy of Management Journal*, 52(5), 856–862.
- Pujari, D. (2006). Eco-innovation and new product development: understanding the influences on market performance. *Technovation*, 26(1), 76–85.  
<https://doi.org/10.1016/j.technovation.2004.07.006>
- Rasche, A., de Bakker, F. G. A., & Moon, J. (2013). Complete and Partial Organizing for Corporate Social Responsibility. *Journal of Business Ethics*, 115(4), 651–663.  
<https://doi.org/10.1007/s10551-013-1824-x>
- Raven, R., Schot, J., & Berkhout, F. (2012). Space and scale in socio-technical transitions. *Environmental Innovation and Societal Transitions*, 4, 63–78.  
<https://doi.org/10.1016/j.eist.2012.08.001>

- Reeve, B., & Magnusson, R. (2015). Food reformulation and the (neo)-liberal state: new strategies for strengthening voluntary salt reduction programs in the UK and USA. *Public Health*, 129(4), 351–363.  
<https://doi.org/10.1016/j.puhe.2015.01.007>
- Reinecke, J., Manning, S., & von Hagen, O. (2012). The Emergence of a Standards Market: Multiplicity of Sustainability Standards in the Global Coffee Industry. *Organization Studies*, 33(5–6), 791–814.  
<https://doi.org/10.1177/0170840612443629>
- Rennings, K. (2000). Redefining innovation — eco-innovation research and the contribution from ecological economics. *Ecological Economics*, 32(2), 319–332.  
[https://doi.org/10.1016/S0921-8009\(99\)00112-3](https://doi.org/10.1016/S0921-8009(99)00112-3)
- Riikinen, R., Kauppi, K., & Salmi, A. (2017). Learning Sustainability? Absorptive capacities as drivers of sustainability in MNCs' purchasing. *International Business Review*, 26(6), 1075–1087. <https://doi.org/10.1016/j.ibusrev.2017.04.001>
- Rohan, M. J. (2000). A rose by any name? The values construct. *Personality and Social Psychology Review*, 4(3), 255–277.
- Roodenburg, A. J. C., Popkin, B. M., & Seidell, J. C. (2011). Development of international criteria for a front of package food labelling system: the International Choices Programme. *European Journal of Clinical Nutrition*, 65(11), 1190–1200. <https://doi.org/10.1038/ejcn.2011.101>
- Sandholtz, K. W. (2012). Making Standards Stick: A Theory of Coupled vs. Decoupled Compliance. *Organization Studies*, 33(5–6), 655–679.  
<https://doi.org/10.1177/0170840612443623>
- Schelfaut, S. (2019, February 24). Nieuwe prijzenoorlog in supermarktländ? (translation: New price war in the land of supermarkets). *Algemeen Dagblad*. Retrieved from <https://www.ad.nl/economie/nieuwe-prijzenoorlog-in-supermarktländ~ae4393f5/>
- Scherer, A. G., & Palazzo, G. (2011). The New Political Role of Business in a Globalized World: A Review of a New Perspective on CSR and its Implications for the Firm, Governance, and Democracy: Political Role of Business in a Globalized World. *Journal of Management Studies*, 48(4), 899–931.  
<https://doi.org/10.1111/j.1467-6486.2010.00950.x>

- Scherer, A. G., Rasche, A., Palazzo, G., & Spicer, A. (2016). Managing for Political Corporate Social Responsibility: New Challenges and Directions for PCSR 2.0: New Challenges and Directions for PCSR 2.0. *Journal of Management Studies*, 53(3), 273–298. <https://doi.org/10.1111/joms.12203>
- Schippers, E. I. *Voedingsbeleid BRIEF VAN DE MINISTER VAN VOLKSGEZONDHEID, WELZIJN EN SPORT.*, Pub. L. No. kst-31532, 2017 184 (2017).
- Scholtens, B. (2006, May 23). Bedrijven komen met “gezond-logo” voor voeding. *De Volkskrant*. Retrieved from <https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:4K16-97S0-TWYV-31SJ-00000-00&context=1516831>
- Schumpeter, J. A. (1943). The process of creative destruction. In *Capitalism, socialism and democracy*. London: Taylor & Francis e-Library.
- Schwartz, S. H., & Bilsky, W. (1987). Toward a universal psychological structure of human values. *Journal of Personality and Social Psychology*, 53(3), 550.
- Scott, C., Hawkins, B., & Knai, C. (2017). Food and beverage product reformulation as a corporate political strategy. *Social Science & Medicine*, 172, 37–45. <https://doi.org/10.1016/j.socscimed.2016.11.020>
- Shankar, P., Ahuja, S., & Sriram, K. (2013). Non-nutritive sweeteners: Review and update. *Nutrition*, 29(11–12), 1293–1299. <https://doi.org/10.1016/j.nut.2013.03.024>
- Sharma, L. L., Teret, S. P., & Brownell, K. D. (2010). The Food Industry and Self-Regulation: Standards to Promote Success and to Avoid Public Health Failures. *American Journal of Public Health*, 100(2), 240–246. <https://doi.org/10.2105/AJPH.2009.160960>
- Slager, R., Gond, J.-P., & Moon, J. (2012). Standardization as Institutional Work: The Regulatory Power of a Responsible Investment Standard. *Organization Studies*, 33(5–6), 763–790. <https://doi.org/10.1177/0170840612443628>
- Slawinski, N., & Bansal, P. (2015). Short on Time: Intertemporal Tensions in Business Sustainability. *Organization Science*, 26(2), 531–549. <https://doi.org/10.1287/orsc.2014.0960>



- Spithoven, A., Clarysse, B., & Knockaert, M. (2011). Building absorptive capacity to organise inbound open innovation in traditional industries. *Technovation*, 31(1), 10–21. <https://doi.org/10.1016/j.technovation.2010.10.003>
- Stahl, B., Obach, M., Yaghmaei, E., Ikonen, V., Chatfield, K., & Brem, A. (2017). The Responsible Research and Innovation (RRI) Maturity Model: Linking Theory and Practice. *Sustainability*, 9(6), 1036. <https://doi.org/10.3390/su9061036>
- Stahl, G. K., & Sully de Luque, M. (2014). Antecedents of Responsible Leader Behavior: A Research Synthesis, Conceptual Framework, and Agenda for Future Research. *Academy of Management Perspectives*, 28(3), 235–254. <https://doi.org/10.5465/amp.2013.0126>
- Stichting Ik Kies Bewust. (2015). *Productcriteria Stichting Ik Kies Bewust*. Retrieved from [https://www.hetvinkje.nl/site/assets/files/1989/productcriteria\\_versie\\_2015.pdf](https://www.hetvinkje.nl/site/assets/files/1989/productcriteria_versie_2015.pdf)
- Stilgoe, J., Owen, R., & Macnaghten, P. (2013). Developing a framework for responsible innovation. *Research Policy*, 42(9), 1568–1580. <https://doi.org/10.1016/j.respol.2013.05.008>
- Stirling, A. (2007). “Opening Up” and “Closing Down”: Power, Participation, and Pluralism in the Social Appraisal of Technology. *Science, Technology & Human Values*, 33(2), 262–294. <https://doi.org/10.1177/0162243907311265>
- Stuckler, D., & Nestle, M. (2012). Big Food, Food Systems, and Global Health. *PLoS Medicine*, 9(6), e1001242. <https://doi.org/10.1371/journal.pmed.1001242>
- Suchman, M. C. (1995). Managing Legitimacy: Strategic and Institutional Approaches. *The Academy of Management Review*, 20(3), 571–610. <https://doi.org/10.2307/258788>
- Swanson, D. L. (1999). Toward An Integrative Theory Of Business And Society: A Research Strategy For Corporate Social Performance. *Academy of Management Review*, 24(3), 506–521. <https://doi.org/10.5465/AMR.1999.2202134>
- Swinburn, B., Sacks, G., Vandevijvere, S., Kumanyika, S., Lobstein, T., Neal, B., ... INFORMAS. (2013). INFORMAS (International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action

- Support): overview and key principles: INFORMAS overview. *Obesity Reviews*, 14, 1–12. <https://doi.org/10.1111/obr.12087>
- Sykes, K., & Macnaghten, P. (2013). 5. Responsible Innovation – Opening Up Dialogue and Debate. In R. Owen, J. R. Bessant, & M. Heintz (Eds.), *Responsible innovation: managing the responsible emergence of science and innovation in society* (pp. 85–107). Chichester, West Sussex: John Wiley & Sons Inc.
- Teece, D. J. (2009). *Dynamic capabilities and strategic management: organizing for innovation and growth*. Oxford ; New York: Oxford University Press.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, 18(7), 509–533.
- Tempels, T., Verweij, M., & Blok, V. (2017). Big Food's Ambivalence: Seeking Profit and Responsibility for Health. *American Journal of Public Health*, 107(3), 402–406. <https://doi.org/10.2105/AJPH.2016.303601>
- Tidd, J., Bessant, J. R., & Pavitt, K. (2005). *Managing innovation: integrating technological, market and organizational change* (3rd ed). Hoboken: Wiley.
- Timmermans, S., & Epstein, S. (2010). A World of Standards but not a Standard World: Toward a Sociology of Standards and Standardization. *Annual Review of Sociology*, 36(1), 69–89. <https://doi.org/10.1146/annurev.soc.012809.102629>
- Todorova, G., & Durisin, B. (2007). Absorptive Capacity: Valuing a Reconceptualization. *The Academy of Management Review*, 32(3), 774–786. <https://doi.org/10.2307/20159334>
- Tojeiro-Rivero, D., & Moreno, R. (2019). Technological cooperation, R&D outsourcing, and innovation performance at the firm level: The role of the regional context. *Research Policy*, 48(7), 1798–1808. <https://doi.org/10.1016/j.respol.2019.04.006>
- Tortoriello, M. (2015). The social underpinnings of absorptive capacity: The moderating effects of structural holes on innovation generation based on external knowledge. *Strategic Management Journal*, 36(4), 586–597. <https://doi.org/10.1002/smj.2228>

- Tracey, J. B., & Tews, M. J. (2005). Construct Validity of a General Training Climate Scale. *Organizational Research Methods*, 8(4), 353–374.  
<https://doi.org/10.1177/1094428105280055>
- Trieu, K., Neal, B., Hawkes, C., Dunford, E., Campbell, N., Rodriguez-Fernandez, R., ... Webster, J. (2015). Salt Reduction Initiatives around the World – A Systematic Review of Progress towards the Global Target. *PLOS ONE*, 10(7), e0130247. <https://doi.org/10.1371/journal.pone.0130247>
- Trouw Economy editors. (2006, February 9). Ruzie om hét keurmerk in de strijd tegen overgewicht; energielogo. *Trouw*. Retrieved from  
<https://advance.lexis.com/api/document?collection=news&id=urn:contentItem:4J77-BV40-TWYV-4341-00000-00&context=1516831>
- Tuczek, F., Castka, P., & Wakolbinger, T. (2018). A review of management theories in the context of quality, environmental and social responsibility voluntary standards. *Journal of Cleaner Production*, 176, 399–416.  
<https://doi.org/10.1016/j.jclepro.2017.12.161>
- United Nations General Assembly. *Transforming our world: the 2030 Agenda for Sustainable Development*. , Pub. L. No. A/RES/70/1 (2015).
- Van de Poel, I. (2013). Translating Values into Design Requirements. In D. P. Michelfelder, N. McCarthy, & D. E. Goldberg (Eds.), *Philosophy and Engineering: Reflections on Practice, Principles and Process* (Vol. 15, pp. 253–266). Retrieved from [http://link.springer.com/10.1007/978-94-007-7762-0\\_20](http://link.springer.com/10.1007/978-94-007-7762-0_20)
- Van de Poel, I., & Fahlquist, J. N. (2012). Risk and Responsibility. In S. Roeser, R. Hillerbrand, P. Sandin, & M. Peterson (Eds.), *Handbook of Risk Theory* (pp. 877–907). Retrieved from [http://link.springer.com/10.1007/978-94-007-1433-5\\_35](http://link.springer.com/10.1007/978-94-007-1433-5_35)
- Van de Poel, I., Nihlén Fahlquist, J., Doorn, N., Zwart, S., & Royakkers, L. (2012). The Problem of Many Hands: Climate Change as an Example. *Science and Engineering Ethics*, 18(1), 49–67. <https://doi.org/10.1007/s11948-011-9276-0>
- Van den Hoven, J. (2013). 4. Value Sensitive Design and Responsible Innovation. In R. Owen, J. R. Bessant, & M. Heintz (Eds.), *Responsible innovation: managing the responsible emergence of science and innovation in society* (pp. 27–50). Chichester, West Sussex: John Wiley & Sons Inc.

- Van den Hoven, J., Lokhorst, G.-J., & Van de Poel, I. (2012). Engineering and the Problem of Moral Overload. *Science and Engineering Ethics*, 18(1), 143–155. <https://doi.org/10.1007/s11948-011-9277-z>
- Van Tulder, R. (2018). *Business & The Sustainable Development Goals: A Framework for Effective Corporate Involvement*. Retrieved from [hdl.handle.net/1765/110689](https://hdl.handle.net/1765/110689)
- Vigneau, L., Humphreys, M., & Moon, J. (2015). How Do Firms Comply with International Sustainability Standards? Processes and Consequences of Adopting the Global Reporting Initiative. *Journal of Business Ethics*, 131(2), 469–486. <https://doi.org/10.1007/s10551-014-2278-5>
- VMT Editors. (2006, May 22). Mogelijke doorstart “bewuste keuze logo” FNLI. *VMT Online*.
- Voegtlin, C., & Scherer, A. G. (2017). Responsible Innovation and the Innovation of Responsibility: Governing Sustainable Development in a Globalized World. *Journal of Business Ethics*, 143(2), 227–243. <https://doi.org/10.1007/s10551-015-2769-z>
- Volberda, H. W., Foss, N. J., & Lyles, M. A. (2010). PERSPECTIVE—Absorbing the Concept of Absorptive Capacity: How to Realize Its Potential in the Organization Field. *Organization Science*, 21(4), 931–951. <https://doi.org/10.1287/orsc.1090.0503>
- Von Schomberg, R. (Ed.). (2011). *Towards responsible research and innovation in the information and communication technologies and security technologies fields: [presentations made at a workshop hosted by the Scientific and Technological Assessment Unit of the European Parliament in November 2010]*. Luxembourg: Publ. Office of the European Union.
- Von Schomberg, R. (2013). 3. A Vision of Responsible Research and Innovation. In R. Owen, J. R. Bessant, & M. Heintz (Eds.), *Responsible innovation: managing the responsible emergence of science and innovation in society* (pp. 51–74). Chichester, West Sussex: John Wiley & Sons Inc.
- Wartick, S. L., & Cochran, P. L. (1985). The Evolution of the Corporate Social Performance Model. *The Academy of Management Review*, 10(4), 758–769. <https://doi.org/10.2307/258044>

- Watson, R., Wilson, H. N., Smart, P., & Macdonald, E. K. (2017). Harnessing Difference: A Capability-Based Framework for Stakeholder Engagement in Environmental Innovation. *Journal of Product Innovation Management*. <https://doi.org/10.1111/jpim.12394>
- West, J., & Gallagher, S. (2006). Challenges of open innovation: the paradox of firm investment in open-source software. *R and D Management*, 36(3), 319–331. <https://doi.org/10.1111/j.1467-9310.2006.00436.x>
- Wijen, F. (2014). Means versus Ends in Opaque Institutional Fields: Trading off Compliance and Achievement in Sustainability Standard Adoption. *Academy of Management Review*, 39(3), 302–323. <https://doi.org/10.5465/amr.2012.0218>
- Windolph, S. E., Harms, D., & Schaltegger, S. (2014). Motivations for Corporate Sustainability Management: Contrasting Survey Results and Implementation: Motivations for Corporate Sustainability Management. *Corporate Social Responsibility and Environmental Management*, 21(5), 272–285. <https://doi.org/10.1002/csr.1337>
- Wood, D. J. (1991). CORPORATE SOCIAL PERFORMANCE REVISITED. *Academy of Management Review*, 16(4), 691–718. <https://doi.org/10.5465/AMR.1991.4279616>
- Wood, D. J. (2010). Measuring Corporate Social Performance: A Review. *International Journal of Management Reviews*, 12(1), 50–84. <https://doi.org/10.1111/j.1468-2370.2009.00274.x>
- World Cancer Research Fund International. (2013). NOURISHING framework. Retrieved September 24, 2015, from <http://www.wcrf.org/int/policy/nourishing-framework>
- World Health Organization. (2017). *Noncommunicable diseases progress monitor, 2017* (L. Riley, H. Gouda, & M. Cowan, Eds.). Retrieved from <http://apps.who.int/iris/bitstream/10665/258940/1/9789241513029-eng.pdf>
- Wright, C., & Nyberg, D. (2017). An Inconvenient Truth: How Organizations Translate Climate Change into Business as Usual. *Academy of Management Journal*, 60(5), 1633–1661. <https://doi.org/10.5465/amj.2015.0718>
- Yam, R. C. M., Lo, W., Tang, E. P. Y., & Lau, A. K. W. (2011). Analysis of sources of innovation, technological innovation capabilities, and performance: An

- empirical study of Hong Kong manufacturing industries. *Research Policy*, 40(3), 391–402. <https://doi.org/10.1016/j.respol.2010.10.013>
- Yin, R. K. (2011). *Qualitative research from start to finish*. New York: Guilford Press.
- Zahra, S. A., & George, G. (2002). Absorptive Capacity: A Review, Reconceptualization, and Extension. *The Academy of Management Review*, 27(2), 185–203.
- Zhang, H., Patton, D., & Kenney, M. (2013). Building global-class universities: Assessing the impact of the 985 Project. *Research Policy*, 42(3), 765–775. <https://doi.org/10.1016/j.respol.2012.10.003>
- Zhao, X., & Murrell, A. J. (2016). Revisiting the corporate social performance–financial performance link: A replication of Waddock and Graves: Revisiting the Corporate Social Performance. *Strategic Management Journal*, 37(11), 2378–2388. <https://doi.org/10.1002/smj.2579>
- Zietsma, C., Winn, M., Branzei, O., & Vertinsky, I. (2002). The War of the Woods: Facilitators and Impediments of Organizational Learning Processes. *British Journal of Management*, 13(S2), S61–S74. <https://doi.org/10.1111/1467-8551.13.s2.6>
- Zollo, M., & Winter, S. G. (2002). Deliberate Learning and the Evolution of Dynamic Capabilities. *Organization Science*, 13(3), 339–351. <https://doi.org/10.1287/orsc.13.3.339.2780>

## Summary

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The role of commercial innovation in society can be described in several ways. In the neoclassical business literature, innovation has traditionally been depicted as a way in which firms are able to gain competitive advantage by responding to the dynamics of their environment and thereby ensuring their own survival. However, scholars over the years have given more and more attention to the unpredictability of innovation and thereby the unforeseen negative impact innovation can have on society. At the same time, commercial innovation can also provide solutions of the grand challenges of today's society. Reflecting upon the positive and negative societal impact of innovation, Responsible Research and Innovation (RRI) scholars have investigated the possibilities of directing innovation away from doing harm and towards doing good. With this aim they have developed several conceptual frameworks for RRI, positioning it as *innovation for and with society*. Although drawing upon a multitude of scientific fields such as research governance, research ethics and engineering ethics, these frameworks have so far not been connected to the business theories on innovation management and empirical investigations of RRI frameworks in commercial innovation settings have been limited.

Business scholars have paid a significant amount of attention to commercial innovation management in the 21<sup>st</sup> century with the development of theories on, for example, Absorptive Capacity. These theories primarily focus on how innovation can create competitive advantage and thus maximize profit by enabling the firm to survive in dynamic environments. By letting this aim guide concept development, the resulting frameworks were focused on the type of knowledge considered to lead to profit maximization and the sources that might provide this knowledge. CSR scholars counter this narrow view of the firm as a profit-maximizing machine. With their focus on social value creation, they indicate that the legitimacy of the firm is not only dependent upon its abilities to please the interests of its immediate stakeholders (e.g. shareholders, customers, employees) but also on whether society believes that the firm effectively promotes societal welfare, as defined by values and norms (i.e. societal values). Over the last decades, CSR scholars have redirected many traditional management theories from profit maximization based on self-interests to social value creation based on societal values. One theoretical field seems, however, to have been limitedly challenged and redirected: innovation management.

In this dissertation, I connect the RRI literature to both the business literature on innovation management as well as the CSR literature. The main aim of this dissertation is to explore how the elements of innovation management theory should be redirected to ensure that commercial innovation processes incorporate societal values and create social value. The main research question is therefore: *How can commercial innovation management be redirected towards social value creation?* Three elements of innovation management were selected and taken up as the three objectives of this dissertation:

- 1) identify and classify the motives of firms to create social value through their product innovations;
- 2) identify organizational capabilities required by firms to absorb societal values in innovation processes;
- 3) determine the role of external standards for stimulating social value creation through innovation.

To answer the research question and achieve the three objectives, a specific context was selected for the empirical investigations. During the last decades, the worldwide prevalence of Non-Communicable Diseases (NCDs; e.g. type 2 diabetes and cardiovascular disease) has increased enormously and have become one of the main public health issues worldwide. As indicated in the UN Sustainable Development Goals, NCDs can be prevented and one of the main prevention methods is the adjustment of the daily diet. Therefore, this ‘grand challenge’ asks food manufacturers to redesign their products and disseminate health-conscious alternatives. Investigating how food firms respond to the NCD crisis with their product innovation provides insights in motives and capabilities needed for taking up the societal value ‘health’ and for overcoming conflicts between this value and other values – such as ‘enjoyment’, ‘affordability’ and ‘convenience’ – that are the main drivers of consumer purchase behavior. The public pressure on food firms to innovate, the high level of competitiveness in the food market and the complex nature of the grand challenge of NCDs allows this context to be an appropriate case to investigate the redirection of commercial innovation towards social value creation.

I start this redirection at the beginning of firm behavior: the motives for innovation. In **chapter 2**, a multiple-case study is presented in which we investigated the motives of food firms for healthier product innovation by interviewing firms about the organizational motives behind product reformulation and innovation. Building on previous work on the motives for socially responsible behavior, the study shows that *both* instrumental and moral motives are present in all firms when aiming for societally responsible outcomes. The motives of the third category – relational motives – were observed, but we show



how these motives are derivatives of instrumental or moral motives. We conclude this chapter by presenting six propositions based on the differences between innovation practices in firms with more pronounced moral motives compared to those with more pronounced instrumental motives. Our main take-home message of this study is that while moral motives appear to promote consistent action on societal values – such as health – the instrumental motives seem leading in defining innovation success in both the firm as well as in the market. Thereby, the first objective of this dissertation is achieved – identify and classify the motives of firms to create social value through their product innovations – although the exact mechanisms of their influence need further empirical substantiation.

To continue the redirection of commercial innovation, *chapter 3* presents our investigation into the capabilities necessary for firms to absorb a societal value like ‘health’ in their innovation process. After pointing out the gaps in the existing theory on Absorptive Capacity (AC), a comparative case study of eight firms in the food industry reveals how organizations prioritize and operationalize the societal value *health* in product innovation while navigating inter- and intra-value conflicts. The value-sensitive framework – Value-sensitive Absorptive Capacity (VAC) – resulting from this study extends AC by explaining how technically-savvy, economic value creating firms diverge in their receptivity, articulation and reflexivity of societal values.

In *chapter 4* the exploration of the VAC framework is continued by transforming its three dimensions into a survey-based instrument. The validity of the instrument is explored in a multilevel analysis including 109 employees (especially from R&D and Marketing & Sales) of 30 food firms. The results show that for the dimension Value Reflexivity a distinction needs to be made between asking feedback from commercial organizations in the same industry and non-commercial organizations (e.g. government, civil society or academia). Furthermore, the validity tests show that while Value Receptivity, Value Articulation and Non-commercial Value Reflexivity are all positively correlated with moral motives and the nutritional composition of a firm’s products, Commercial Value Reflexivity does not show a significant positive correlation with both variables. This result for Commercial Value Reflexivity could indicate that other firms in the food industry might not be the most relevant dialogue partners to stimulate socially responsible innovation and allows us to question whether this dimension should be included in the VAC framework. Although further research is needed on the framework and the related survey instrument, the VAC framework provides the innovation management field with

a guide to redirect their frameworks on organizational capabilities for innovation to social value creation – thereby, achieving the second objective of this dissertation.

In the last study of this dissertation – presented in **chapter 5** – the external influences on the redirection of commercial innovation are investigated in the shape of CSR standards. These voluntary standards define what it means to be socially responsible and often translate one or more societal values into norms and design requirements to be taken up in a firm's innovation process. To be considered legitimate, CSR standards need to represent the values and norms that are seen as fair and effective by society (i.e. input legitimacy) and at the same time to be able to standardize the behavior of firm (i.e. output legitimacy). However, getting firms to participate in and comply with CSR standards takes time. In order for CSR standards to endure over the long-term, their content needs to be revised to respond to changes in society and new insights on the societal value they represent. By studying the longitudinal effects of the standards underlying a front-of-pack label indicating the healthiness of food products, our study shows that a) making CSR standards more aligned with the views of civil society can increase the average social value created, but that b) de-certifications of products due to stricter standards demotivates firms to invest in compliance. This result might be explained by a lack of visibility of firm behavior and thus we propose further investigations into how transparency of the standardization organization influences the legitimacy of CSR standards. By identifying the conditions under which CSR standards influence commercial innovation behavior, we show that CSR standards could play a part in redirecting commercial innovation management towards social value creation – as was the third objective of this dissertation.

The **final chapter** of this dissertation not only presents how the three objectives were achieved but also discusses wider reflections on the connections between the three elements of innovation management investigate: a) how a firm's motives possibly drive its strategies for overcoming value conflicts; b) what the study results say about the relationship between the motives for innovation and the VAC dimensions; c) how the use of CSR standards might be related to motives; d) how CSR standards might support the development of a firm's VAC. Together these reflection answer the main research question of this dissertation. I end this dissertation by discussing how our research and its limitations might raise new research questions and how managers could interpret the results of our research to improve the reflexivity of their organization.

# Samenvatting

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In onze huidige samenleving zijn er meerdere uitdagingen of problemen die de vooruitgang van zowel de mensheid als de rest van de planeet bedreigen. In 2015 hebben de Verenigde Naties daarom de 17 duurzame ontwikkelingsdoelen gepresenteerd die samenvatten op welke gebieden er actie moet worden ondernomen. Daarbij worden niet alleen overheden en maatschappelijke organisaties gevraagd een bijdrage te leveren, maar ook het bedrijfsleven wordt aangesproken op haar verantwoordelijkheid om de schade die zij mede-veroorzaken te minimaliseren. Daarnaast moeten er voor de schade die al veroorzaakt is innovatieve oplossingen gezocht worden. Sinds het bedrijfsleven een van de grootste krachten achter het ontwikkelen en verspreiden van innovatieve oplossingen is, worden bedrijven gevraagd om hun productontwikkeling in te zetten voor deze doelstellingen

Doel nummer drie van de zeventien duurzame ontwikkelingsdoelen is het garanderen van goede gezondheid van de wereldbevolking en het stimuleren van welzijn voor alle leeftijden. Een van de grootste uitdagingen op dit gebied vormen niet-overdraagbare ziekten, zoals diabetes type 2, hart- en vaatziekten en kanker, die samen voor het grootste aantal sterfgevallen ter wereld zorgen. Een aantal van deze ziekten kunnen voorkomen worden door gezond te eten en een dagelijks dieet met goede energiebalans te volgen om zo overgewicht te voorkomen. De consumptiepatronen van mensen worden echter niet alleen door henzelf bepaald, maar ook door het aanbod in supermarkten, restaurants en op andere verkooppunten. Om de toename van dieetgerelateerde ziekten een halt toe te roepen, worden voedingsproducenten en retailers aangesproken op de samenstelling van hun producten en op hoe zij deze producten verkopen aan de consument. Als zij willen bijdragen aan de duurzame ontwikkelingsdoelen en niet hun legitimiteit als voedingsbedrijf kwijt willen raken, zullen deze voedingsbedrijven hun huidige producten dus aan moeten passen en nieuwe, gezondere alternatieven op de markt moeten brengen. Dit vraagt om productinnovatie.

Deze opdracht is om meerdere redenen niet heel simpel uit te voeren. Ten eerste zijn de gevolgen van innovatie niet altijd te voorspellen. Als een bedrijf een nieuw product op de markt zet, kan het van tevoren niet exact weten hoe de consument reageert. Als een producent bijvoorbeeld het suikergehalte in een limonadesiroop verlaagt, kan het best zijn dat de consument het niet zoet genoeg meer vindt en meer van het product gaat gebruiken om dezelfde smaak te krijgen. Daarmee wordt het gezondheidseffect

tenietgedaan. De onvoorspelbaarheid van innovatie komt ook doordat grote maatschappelijke problemen, zoals de genoemde dieetgerelateerde ziekten, veroorzaakt worden door een samenspel van individueel gedrag, overheidsbeleid, maatschappelijke trends en activiteiten van (andere) commerciële partijen. Samen vormen deze factoren een onoverzichtelijk web van verbanden en afhankelijkheden, dat zich niet altijd gemakkelijk aan laat passen. Neem bijvoorbeeld een gezondheidslabel op de voorkant van de voedingsproducten, zoals het voormalige Vinkje en nu de nieuwe Nutriscore. Zulke labels zijn gebaseerd op het idee dat als er afgesproken wordt wat een gezond product is en consumenten hierover geïnformeerd worden, zij in staat zijn gezonde keuzes te maken en de minder gezonde producten links laten liggen. De ervaringen met het Vinkje en de recentste ontwikkelingen omtrent de Nutriscore laten echter zien dat zowel het opstellen van gezondheidscriteria voor één product als onderdeel van een variërend dieet, als het informeren van consumenten en beïnvloeden van hun aankoopgedrag niet zo eenvoudig is.

Ten tweede wordt in ons huidige economisch systeem het succes van bedrijven bepaald door de economische waarde die zij creëren. Daardoor is het beeld ontstaan dat het enige doel van bedrijven winstmaximalisatie is, met alle gevolgen van dien. Als winstmaximalisatie het enige doel is van een voedingsbedrijf en het produceren van voedingsproducten met hoge energiegehalte en weinig voedingsstoffen tot de hoogste winst leidt, dan is dat toch de enige juiste bedrijfsstrategie? Met oog op de negatieve gevolgen van deze eenzijdige doelstelling stellen steeds meer economen en bedrijfskundigen de vraag: moeten bedrijven niet méér doen dan alleen economische waarde creëren om als succesvol te worden gezien en hun voortbestaan te legitimeren? Daarin spreken deze economen en bedrijfskundigen van ‘sociale waarde’-creatie door het creëren van positieve effecten voor alle belanghebbenden van een bedrijf, inclusief de samenleving in het geheel. Dit inzicht wordt ook door steeds meer bedrijven overgenomen. In de markt waarin deze bedrijven opereren is winstmaximalisatie echter nog steeds het hoofddoel. Wanneer een bedrijf een innovatief product op de markt brengt waarmee wel sociale waarde gecreëerd wordt, maar dat minder winst oplevert, steekt een bedrijf haar kop boven het maaiveld uit en kan zij door de markt worden afgestraft. Als een bedrijf bijvoorbeeld het suikergehalte van haar producten verlaagt om zo de energie-inname van de consument te verminderen, loopt dit bedrijf het risico dat de consument overloopt naar het product van haar concurrent omdat de smaak niet meer hetzelfde is. Maatschappelijk verantwoorde innovatie loont in de huidige markt dus niet altijd.

Ten slotte is de definitie van wat maatschappelijk verantwoord is niet altijd eenduidig. Wat in een maatschappij gezien wordt als moreel goed gedrag wordt bepaald door de maatschappelijke waarden en normen. Ondanks dat deze maatschappelijke waarden beschouwd kunnen worden als universeel (iedereen vindt gezondheid belangrijk) en stabiel over de tijd (ook onze overgrootouders vonden gezondheid belangrijk) wil dit niet zeggen dat deze waarden door iedereen op dezelfde manier worden vertaald naar normen en voorschriften voor producten. De ene persoon vindt dat een gezond dieet niet zonder vlees kan en de ander geeft aan dat producten zonder kunstmatige smaak- en geurstoffen het gezondst zijn. Daarnaast is nog niet alles bekend over de werking van voeding op ons lichaam en dus leiden nieuwe onderzoeksresultaten tot verschuivingen in de wetenschappelijke definitie van gezondheid. Voedingsbedrijven die gezonde producten willen ontwikkelen moeten zich een weg banen door al deze verschillende inzichten en veranderingen over de tijd.

In dit proefschrift beschrijf ik hoe bedrijven in deze complexe omgeving toch proberen maatschappelijk verantwoord te innoveren. Ik onderzoek daarvoor drie verschillende aspecten van maatschappelijk verantwoorde innovatie in het bedrijfsleven: 1) de motieven; 2) de capaciteiten en 3) de invloed van externe standaarden. In hoofdstuk 2 presenteer ik een studie naar de motieven van voedingsbedrijven voor gezonde productontwikkeling. Door middel van een analyse van bedrijfscommunicatie in rapporten en websites en het afnemen van interviews met verscheidene managers in acht voedingsbedrijven, heb ik twee soorten motieven geïdentificeerd: instrumentele motieven en morele motieven. Als een bedrijf instrumenteel gemotiveerd is om gezonde producten te maken dan komt dit voort uit het idee dat deze producten bijdragen aan de winst van het bedrijf: de producten zijn instrumenteel voor het voortbestaan van het bedrijf zelf. De morele motieven komen voort uit het idee dat het maken van gezonde producten het enige juiste is om te doen en dat met deze producten het bedrijf bijdraagt aan het welzijn in onze samenleving. In de acht bedrijven waren beide motieven aanwezig, maar bij sommige bedrijven waren de instrumentele motieven prominenter aanwezig dan de morele motieven. Bij de meer instrumenteel gemotiveerde bedrijven observeerde ik dat de definitie van gezondheid minder consequent was doorgevoerd, waardoor het bedrijf bijvoorbeeld elk jaar een andere gezondheidstrend volgde. Daarnaast gaven alle bedrijven aan dat de criteria voor succes van een product in de markt verbonden zijn aan de instrumentele motieven en dat daarmee ook hun eigen productevaluatie gebaseerd zijn op instrumentele en niet-morele criteria, bijvoorbeeld 'haalt het product zijn verkoopdoelstellingen?' en niet 'hoe gezond vindt de consument of de maatschappij ons product?'.

Het volgende aspect dat ik onderzocht was welke capaciteiten een bedrijf nodig heeft om maatschappelijk verantwoord te innoveren. In de bedrijfskunde is veel onderzoek gedaan naar welke capaciteiten een bedrijf nodig heeft om succesvolle innovaties op de markt te brengen en zich als organisatie te blijven vernieuwen. Eén van die capaciteiten is het absorberen van kennis. Bedrijfskundigen gingen bij het onderzoeken van deze absorptiecapaciteit echter altijd uit van winstmaximalisatie als doelstelling. In hoofdstuk 3 stelde ik de vraag: welke capaciteiten heeft een bedrijf nodig voor innovatie als het doel sociale waardecreatie is? Daarin ging ik ervan uit dat een bedrijf om sociale waarde te creëren (door bijv. gezondere producten te maken) maatschappelijke waarden en normen (bijv. gezondheid en gezondheidskenmerken) moet opnemen in zijn productontwikkeling. Door de interviews en bedrijfscommunicatie opnieuw te analyseren identificeerde ik drie dimensies van wat ik *waardegevoelige absorptiecapaciteit* noem. De eerste dimensie is *waardereceptiviteit*, waarbij een bedrijf ‘gezondheid’ herkent als belangrijke waarde en begrijpt wat deze waarde betekent voor zijn producten. De tweede dimensie is *waarde-articulatie*, waarbij een bedrijf de maatschappelijke waarde ‘gezondheid’ communiceert binnen haar organisatie. De laatste dimensie is *waardereflexiviteit*, waarbij een bedrijf haar verantwoordelijkheid voor gezondheid evalueert door feedback te vragen van externe partijen en haar activiteiten daarbij aanpast met behulp van deze feedback.

In hoofdstuk vier bouw ik voort op deze drie dimensies door ze om te zetten in een vragenlijst en deze af te nemen onder 109 werknemers van dertig voedingsproducenten. Het doel van deze studie was om een valide en betrouwbaar meetinstrument te maken voor *waardegevoelige absorptiecapaciteit*. De resultaten van deze studie bevestigen dat de meetinstrumenten voor de dimensies *waardereceptiviteit* en *waarde-articulatie* betrouwbaar en valide zijn. Voor *waardereflexiviteit* lieten de analyses echter zien dat het meetinstrument opgesplitst moet worden in twee instrumenten: een over feedback van andere voedingsbedrijven en een over feedback vragen van niet-commerciële organisaties (bijv. overheid, maatschappelijke organisaties en wetenschap). Daarbij laten de resultaten zien dat het instrument voor *niet-commerciële waardereflexiviteit* valide en betrouwbaar zijn, terwijl het instrument voor *commerciële waardereflexiviteit* wel betrouwbaar is, maar niet valide. Dit betekent dat we in twijfel kunnen trekken in hoeverre feedback vragen van andere voedingsbedrijven bijdraagt aan de capaciteit van het bedrijf om de waarde ‘gezondheid’ te absorberen en dus gezondere producten te maken.

In de laatste studie van dit proefschrift onderzocht ik invloeden van externe standaarden voor maatschappelijk verantwoord ondernemen. Voordat ze toegepast kunnen worden

in productontwikkeling moeten maatschappelijke waarden vertaald worden naar regels en criteria; bijvoorbeeld hoeveel calorieën een product mag bevatten en hoe hoog het zoutgehalte mag zijn. Deze vertaling kan een bedrijf zelf maken, maar het kan ook gedaan worden door een externe organisatie die daarmee de standaard zet voor de gehele industrie. De criteria van het gezondheidslabel Het Vinkje hadden die functie: deze criteria zetten de standaard voor wat een gezond product is. Door de jaren heen zijn de criteria van het Vinkje aangepast. Om geaccepteerd te worden als een standaard voor maatschappelijk verantwoord innoveren, moeten deze criteria en de manier waarop ze opgesteld gezien worden als legitiem door de maatschappij. De vraag die ik stel in hoofdstuk vijf is of de aanpassingen van de criteria hebben bijgedragen aan de legitimiteit van het Vinkje. De resultaten van de studie laten zien dat wanneer de criteria strenger werden en er dus hogere gezondheidseisen aan producten in een bepaalde categorie (bijv. brood, snacks) werden gesteld, de producten in die categorie gezonder werden. Deze uitkomst zou betekenen dat het Vinkje in deze categorieën het doel bereikte om producten gezonder te maken, wat bijdraagt aan haar legitimiteit. Tegelijkertijd zorgden deze strengere criteria er echter voor dat een aantal producten hun Vinkje kwijtraakte. Mijn onderzoek laat zien dat de bedrijven waarvan meerdere producten het Vinkje kwijtraakten, daarna ook minder producten lieten certificeren. Aangezien de legitimiteit van het Vinkje als standaard wordt bepaald door de mate waarin de bedrijven bereid waren hun producten te herformuleren naar aanleiding van de strengere criteria, laat dit resultaat zien dat het strenger maken van de criteria niet het beoogde effect had. Daarmee kunnen we concluderen dat het strenger maken van een standaard voor maatschappelijk verantwoord innoveren, zoals het Vinkje, niet direct leidt tot meer maatschappelijk verantwoorde producten en dus ook niet altijd bijdraagt aan de legitimiteit van de standaard zelf.

De resultaten van deze vier studies laten zien dat maatschappelijk verantwoord innoveren ingewikkeld maar niet onmogelijk is, welke motieven en capaciteiten bedrijven gebruiken om dit soort innovatie uit te voeren en wat de effecten zijn van externe standaarden op het Vinkje. Ik hoop met dit proefschrift dan ook meer inzicht te bieden 1) in de manieren waarop maatschappelijk verantwoord innoveren binnen bedrijven gestimuleerd kan worden en 2) in de obstakels die voor deze soort innovatie overwonnen moeten worden.

## Acknowledgements

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With this dissertation I hope to have created social value in the shape of new knowledge and innovative insights of how business can contribute to society. However, I would not have been able to absorb this knowledge and produce these insights without my own community. That's why several acknowledgements are in order.

First, I would like to acknowledge the support of my daily supervisor Vincent throughout the last four and a half years. Thank you for teaching me how to be receptive for all the intricacies of the world of Responsible Innovation, how to articulate my thoughts in clear and well-substantiated way and providing me with a mirror to reflect upon my own growth as a scientist and to challenge my doubts and fears. Thank you as well for being open about your own struggles, which allowed me to be open about mine and gave us food for conversations about our role as scientists and citizens in creating progress in society and have fun life doing it!

Second, my other two supervisors. Thank you, Léon, for opening the door for Teunis and me and showing us the difficulty of creating change in a stubborn environment. I thoroughly enjoyed our walks where we talked about everything that bothered us in our work and daily life and always ended up with a positive outlook on how to continue. Thank you for always patiently listening to my theories of how the world (should) work and helping me to ground them in the reality of practice. Thank you, Onno, for sharing your expertise on the food industry and making sure my research plans were feasible in order to avoid disappointment. Thank you as well for your support in navigating all the procedures of completing a PhD, especially in the final year.

My supervisors were not the only ones contributing to my articles. Oana, thank you for showing me the wonderful world of qualitative data analysis and opening my eyes for new ways of looking at my data. Without your ideas and steering the Value-sensitive Absorptive Capacity framework would not exist in the way it stands today. I hope we'll get to work together again in the future. This thanks also goes out to Tima and her Sustainability team at the Ivey Business School, who welcomed me and sharpened my thinking. In addition, I would like to thank the members of the valorization panel and the firms that were willing to share their insights from practice with me.



Although their names do not always appear in the articles, my colleagues at Wageningen University were crucial in not only improving my academic skills but also providing me the professional and personal support needed to complete a PhD. To start at the beginning of the hallway: Ina, Linette, and Liesbeth, thank you for your help navigating the administrative systems and procedures, but also the listening ear and the life advice provided. Marloes, thank you for being my buddy, both inside and outside the office, listening to my frustrations and for brainstorming with me on improving the user-friendliness of the WUR systems. Then walking into the hallway, my academic colleagues, thank you for all the fun and interesting lunch conversations and sharing your experiences in academia and life with me. At the end of the hallway lies the peer support system of a BMO PhD. Thank you to all who have come and gone over the years for strengthening this support system and for joining me in starting the PhD meetups and setting up the 5<sup>th</sup> floor lounge: Rob, Daniel, Waliou, August, Mmapatla, Thom, Job, Peter, Eugen, Saskia, Francisco, Sophia, Carlos, Mercy, Daniel, Timothy, Robert, Katty, Aglaia, Alice, Jasmina, Fanny, Franco, Amin, Delelene, Lavlu, Vivi and Sebastian. A special shout-out goes to my commute-buddies and Utrecht-gang: Lisa, Annemarie and Edurne. As I'm not a person who stays within the boundaries of a hallway, I would also like to thank the colleagues of MCB, ORL, BEC, INF and the WASS team for all their support and the entertaining talks at the coffee machine.

Then there are two colleagues who deserve a bit more acknowledgement. Sonja, thank you for tolerating me and hanging out with me, although it must have been a great burden. I hope that you'll continue your community service by listening to my whining and kicking my butt on the boulders. Teunis, my office mate, project buddy and companion in this PhD journey. Beste Teunis, toen wij samen begonnen aan dit project dacht ik: ze hadden niet twee grotere tegenpolen kunnen vinden. Jij een rustige econoom/filosoof uit de randstad en ik een aanwezige gezondheidswetenschapper uit het oosten van het land. Maar na vier jaar lijkt het wel alsof we gewisseld zijn van oogpunt. Niet alleen op werkgebied – jij bent de wereld van de gezondheid en voedingsindustrie ingedoken en ik ben me in gaan graven in business management en ethiek – maar ook qua woonplaats – jij woont nu een paar kilometer van mijn ouderlijk huis en ik reis elke dag naar jouw oude woonplaats. Ik denk dat we elkaar bewust en onbewust geïnspireerd hebben. Ondanks jouw naam niet op mijn artikelen staat kan ik je zeggen dat de gesprekken over onze casus en over de gedeelde literatuur veel van mijn inzichten hebben geïnspireerd. Bedankt voor deze inspiratie en voor een gezellige en productieve samenwerking. En wie weet wisselen we over een paar jaar weer van oogpunt.

As most of you know, I find it difficult to shut down my work-mind and leave it in my office. That's why I owe my friends and family a whole lot of gratitude to force me to stop the worries about tomorrow and enjoy today. For my friends, thank you for all the fun distractions you have provided me and when my work-mind was still on to help it calm down with intense discussions, personal advice and nonsensical conversations. I would love to name you all, but then I would just copy my Whatsapp-contact list. Instead let me just say: thank you for providing me a second home in Utrecht, Rotterdam, Breda, Leiden, Eindhoven, Heel, Roggel, Limbricht, Swalmen, Maastricht, Brussel, Oberhausen, München, London (UK), Valencia, London (CA) and Atlanta/Istanbul.

Daarnaast heb ik gelukkig een grote, liefdevolle (schoon)familie, waarbij ik altijd terecht kan. Wim, Linda, Bas & Joyce, bedankt voor jullie liefde, steun, goede gesprekken en al het plezier! Door jullie voel ik me altijd welkom in het prachtige Oudewater. Mayke, Jan en mijn mijn schone Zussen: bedankt voor jullie luisterende oren en goede discussies over de (on)zin van het leven. Jullie zijn een verrijking van ons soms wat bijzondere gezin. Dan meine großen Brüder: mijn boekverslag is nu eindelijk klaar en als straks mijn spreekbeurt goed gaat, mogen jullie je kleine zusje eindelijk 'Dr. Garst' noemen. Maar 'kleine zus' is ook nog steeds goed, hoor.

Lieve mams en paps, bedankt voor jullie vertrouwen, interesse, bezorgdheid, liefde, begrip en eindeloze steun. Elke keer dat een van jullie belt, denk ik 'oh, even bijkletsen' en dan wordt het toch weer een gesprek van een uur of twee. Mamsie, het is heerlijk om met jou de sociale wereld om ons heen te analyseren. Bedankt dat je me altijd wilt helpen (gevraagd of ongevraagd, omdat je weet dat ik slecht ben in om hulp vragen) en al is het soms gewoon voor de gezelligheid. Paps, op een of andere manier eindigen onze gesprekken altijd in een analyse van de hele wereldproblematiek. Bedankt voor deze geweldige gesprekken en voor alle praktische adviezen en steun. Ik ben jullie beiden erg dankbaar voor het mij leren om zelfstandig, onderzoekend, sociaal en open naar anderen te zijn. Zonder jullie steun had ik hier niet gestaan.

En dan de laatste persoon die ik wil bedanken, mijn Koen. Liefste van de liefsten, ik zou hier heel veel dingen willen schrijven, maar dat zou toch niet weergeven hoeveel jij voor mij betekent en betekend hebt tijdens het maken van dit proefschrift. Ook al zou je het nooit erkennen, zonder jou was dit proefschrift er nooit geweest. Ik geloof echt dat er niemand in het hele universum beter is voor mij dan jij. Bedankt voor je geduld, liefde, butt-kicking, grappen, knuffels en onvoorwaardelijk vertrouwen in mij. Ik hou van je.

**Jilde Garst**  
**Wageningen School of Social Sciences (WASS)**  
**Completed Training and Supervision Plan**



Wageningen School  
of Social Sciences

Name of the learning activity	Department/Institute	Year	ECTS*
<b>A) Project related competences</b>			
Philosophy of Responsible Innovation	OZSW	2015	5
<i>"Barriers for implementing Responsible Innovation in firms"</i>	4S/EASST conference, Barcelona	2016	1
Groningen Collaboration for Innovation Conference Doctoral Consortium	Groningen University	2016	1
<i>"Is feeling responsible required for acting responsibly? Motives for Responsible Innovation in food firms"</i>	IABS Business & Society conference, Amsterdam	2017	1
<i>"Becoming Value-Sensitive in Absorbing Knowledge. The Capabilities Needed by Food Firms to Answer the Societal Call for Health."</i>	Ivey Sustainability Conference, London (Canada)	2018	1
<i>"When the aim of innovation goes beyond firm survival: Introducing Value-sensitive Absorptive Capacity"</i>	Business & Society Research Seminar, Amsterdam	2019	1
<i>"Introducing Value-sensitive Absorptive Capacity"</i>	EURAM 2019, Lisbon	2019	1
<b>B) General research related competences</b>			
WASS Introduction course	WASS	2015	1
Writing research proposal	WASS	2016	6
The essentials of scientific writing and presenting	WGS	2016	1.2
Interviewing Techniques (YRM-65100)	WUR	2016	1.5
Statistics for PhD candidates by using SPSS	Radboud University	2017	2
Qualitative Data Analysis	WASS	2017	2.5
<b>C) Career related competences/personal development</b>			
Teaching and supervising students	BMO	2016-2019	4
PhD Workshop Carousel	WGS	2016	0.3
3rd Wageningen PhD Symposium	WUR	2016	0.3
Organisation of multi-disciplinary symposium 'Small labels, big challenges'	WUR	2017	1
<i>"Verantwoordelijkheid Stakeholders en de overheid" – panel session</i>	Foodlog Jaarcongres 'Gezonde Innovatie', Ede	2019	1
<b>Total</b>			<b>31.8</b>

\*One credit according to ECTS is on average equivalent to 28 hours of study load

# Colophon

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The research described in this thesis was funded by a grant of the Netherlands Organization for Scientific Research (NWO), partially supported by the Dutch Choices Foundation. Thanks to a travel grant of the LEB fund part of the research could be pursued at the Ivey Business School in London, Canada.

Financial support from Wageningen University for printing this thesis is gratefully acknowledged.

**Cover design:** Jilde Garst

**Printed by:** Digiforce / Proefschriftmaken

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