Attitudes toward Corporate Sustainability

A Multi-Item Scale and a Multi-Country Empirical Analysis

Inauguraldissertation

zur Erlangung des akademischen Grades

Doctor rerum politicarum

vorgelegt und angenommen

an der Fakultät für Wirtschaftswissenschaft

der Otto-von-Guericke-Universität Magdeburg

Verfasserin:	Diplom-Kauffrau Caterina Kausch
Geburtsdatum und -ort:	07. März 1984 in Wolmirstedt
Arbeit eingereicht am:	29. Oktober 2012
Gutachter der Dissertation:	Prof. Dr. Abdolkarim Sadrieh
	Jun.-Prof. Dr. Christopher Schlägel

Datum der Disputation: 17. April 2013

Acknowledgement

Table of Contents

List of Tables

List of Figures

List of Abbreviations

AA	AccountAbility
AVE	Average Variance Extracted
BRIC	Brazil, Russia, India, China
BSE	Bombay Stock Exchange
CC	Corporate Citizenship
CERES	Coalition for Environmentally Responsible Economies
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CR	Corporate Responsibility
CS	Corporate Sustainability
CSA	Corporate Sustainability Attitude
CSR	Corporate Social Responsibility
CSRO	Corporate Social Responsibility Orientation
CVR	Content-Validity Ratio
CVSCALE	Individual Cultural Values Scale
DAX	Deutscher Aktien IndeX
DJIA	Dow Jones Industrial Average
ECON	Economic
EFA	Exploratory Factor Analysis
EMAS	Eco-Management and Audit Scheme
ENV	Environmental
GFI	Goodness of Fit Index
GLOBE	Global Leadership and Organizational Behavior Effectiveness
GRI	Global Reporting Initiative
H1	Hypothesis 1
H2	Hypothesis 2
H3	Hypothesis 3
H4	Hypothesis 4
H5	Hypothesis 5
H6	Hypothesis 6
H7	Hypothesis 7
H8	Hypothesis 8
ICC	International Chamber of Commerce
IIC	Inter-Item Correlation
IÖW	Institut für ökologische Wirtschaftsforschung (Institute for Ecological Economy Research)
ISO	International Organization for Standardization
KMO	Kaiser-Meyer-Olkin

M	Mean
MGCFA	Multi-Group Confirmatory Factor Analysis
NIE	New Institutional Economics
OECD	Organization for Economic Co-operation and Development
OHSAS	Occupational Health and Safety Management System
OLS	Ordinary Least Squares
PCA	Principal Component Analysis
PRESOR	Perceived Role of Ethics and Social Responsibility
R	Reversed Item
RMSEA	Root Mean Square Error of Approximation
RTS	Russian Trading System
SA	Social Accountability
SAQ	Social Attitudes Questionnaire
SD	Standard Deviation
SE	Standard Error
SEA	Social and Environmental Accountability
SOC	Social
SSE	Shanghai Stock Exchange
SVS	Schwartz Value Survey
TBL	Triple Bottom Line
U.S.	United States
UK	United Kingdom
UN	United Nations
UNCSD	United Nations Conference on Sustainable Development
USA	United States of America
VIF	Variance Inflation Factor
WBCSD	World Business Council for Sustainable Development
WCED	World Commission on Environment and Development

List of Symbols

c_{sv}	Substantive-validity coefficient
df	Degrees of freedom
N	Total number of respondents/experts
n	Sample size
n_c	Number of experts who assigned an item to its intended construct
n_o	Highest number of assignments of the item to any other construct in the set
n_e	Number of experts judging an item to be essential
p	Probability level
p_{sa}	Proportion of substantive agreement
Q	Demand function
r	Pearson correlation coefficient
r	Effect size
R^2	Coefficient of determination
S	Quality term for corporate sustainability
α	Cronbach's alpha
β	Unstandardized beta coefficient
λ	(Standardized) factor loading
ρ_c	Composite reliability
τ	Intercept
ε	Random measurement error
χ^2	Chi-square

1 Introduction

The concept of *corporate sustainability* (CS) has emerged as one of the business megatrends of the last decade, receiving severe attention at the corporate level (Lubin & Esty, 2010, p. 43). In the light of increasing resource and energy costs, as well as the intensified shortage of qualified labor, companies' competitiveness and viability in the long run will more than ever depend on the ability to ensure the efficient and effective use of economic, social, and environmental capital at all stages of the value chain. In addition, businesses[1] play a vital role in achieving overall sustainable development. On the following pages the underlying problems that are addressed within this dissertation are introduced, followed by the objectives and research questions. An outline of the dissertation's general structure completes the introduction.

1.1 Problem Statement

The growing strategic importance of corporate sustainability has heightened the need for research on potential drivers of sustainable business practices. A potential value increase through the commitment to corporate sustainability was also supported by recent empirical studies, providing evidence on the business case for corporate sustainability (Kiron, Kruschwitz, Haanaes, & Streng Velken, 2012; Knoepfel, 2001, Lo & Sheu, 2007; Schreck, 2011). While the influence of macro level and meso level factors on corporate sustainability has been extensively discussed in the management literature, several researchers have pointed out that too little research has been undertaken on linking individual level factors to corporate sustainability and responsibility (e.g. Aguinis & Glavas, 2012, p. 22; Fukukawa, Shafer, & Lee, 2007, p. 381; Kaldschmidt, 2011, p. xiii; Ng & Burke, 2010, p. 603; Orlitzky, Siegel, & Waldman., 2011, p. 11; Swanson, 1999, pp. 517-518).

In fact, developing a holistic corporate sustainability strategy and successfully implementing sustainable business practices requires fundamental organizational transformation; a process that can arguably only be achieved if the effort comes from within the company and is borne by change agents in the form of visionary managers, employees, and entrepreneurs that comprehend the necessity of integrating economic, environmental and social aspects for the long-term viability of the company (Ng & Burke, 2010, p. 610; Pedersen, 2011, pp. 177-178). The importance of individual level factors has recently been pointed out by the Enquete Commission, emphasizing the necessity of promoting a shift towards more supportive values in order to achieve sustainable development (Deutscher Bundestag, 2012, p. 12). However, a change in values and attitudes requires, first, a better understanding of the link between values, attitudes, and sustainable behavior.

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[1] The terms business, company, corporation, enterprise, or firm are used interchangeably in this dissertation, referring to commercial organizations.

Drawing on the theory of New Institutional Economics (NIE), management decisions are informed by the prevalent institutional framework as well as decision makers' individual characteristics and preferences (Williamson, 1996, p. 326). The pivotal role of decision makers' background characteristics on organizational behavior is also well established, theoretically as well as empirically, in the upper echelon theory. Studies show that organizational behavior is, to some extent, a reflection of upper echelons' individual background characteristics, including attitudes, personal value priorities, personality traits, and socio-demographic factors (Carpenter, Geletkanycz, & Sanders, 2004; Hambrick & Brandon, 1988; Hambrick & Mason, 1984; Meglino & Ravlin, 1998). This implies that attitudes toward sustainability influence the commitment to corporate sustainability issues, the likelihood of addressing corporate sustainability objectives, and eventually the implementation of sustainable business practices.

Considering the pivotal role of decision makers' attitudes for organizational behavior, it remains to be identified how their sustainable attitudes and beliefs are shaped and influenced through the prevalent formal and informal institutional framework and the individual background characteristics. The present dissertation seeks to fill part of the above-mentioned void and contribute to a greater understanding of attitudes toward corporate sustainability. Put more precisely, a cross-cultural survey is conducted to examine the relevance that is ascribed by business students from Brazil, Russia, India, China (hereafter referred to as BRIC), Germany, and the USA to corporate sustainable business practices for a company's long-term success, as well as the impact of individual cultural orientations, personal values and socio-demographic factors on these individual mindsets.

Conducting research with business students has three advantages. First, the decision-making process of managers in situations involving economic, environmental, and social aspects is not only a function of personal characteristics and the institutional framework of the country. It is also informed by the organizational culture and industry environment. By using students, factors pertaining to the industry or organization are cut off, making it easier to isolate the effects of individual level determinants on corporate sustainability attitudes. Moreover, present business students constitute the future entrepreneurs, managers, and employees. Consequently, they will be the future decision makers who set the course of companies over the next decades. As a reaction toward recent business scandals, universities increasingly have incorporated compulsory or elective courses in their curricula, covering the concepts of corporate social responsibility (CSR), business ethics, and sustainability (Ibrahim, Angelidis, & Howard, 2006, p. 159; Thomas, 2005, p. 188). Hence, present business students have been very likely more exposed to the concepts of corporate sustainability and responsibility than former student generations. Although these courses may lay the foundation for an increased awareness of corporate sustainability among the future workforce, they guarantee neither that students will act sustainably on the job nor if they understand the importance of sustainability for the company's well-being in the long run. Therefore, it is important to identify individual

antecedents of future decision makers' attitudes toward corporate sustainability. Finally, such a large-scale study would not have been feasible with anything other than university student samples.

Another driver for conducting this multi-country study was the insufficient existence of cross-cultural empirical studies on this topic. Research on individual perspectives toward corporate responsibility (CR) and corporate sustainability has been mostly limited to mono-cultural studies and the Western world (Burton, Farh, & Hegarty, 2000, p. 154; Egri & Ralston, 2008, p. 326); a fact that has also been underlined by Furrer et al. (2010) who stated that research on cross-national differences regarding attitudes toward corporate sustainability and responsibility is still in an *"embryonic stage"* (p. 393). Due to the dominating Anglo-Saxon view, little is known about emerging markets' perspectives on the link between business and society. Sustainability is, however, a global issue. Thus, investigating cross-cultural similarities and differences regarding CS attitudes is of utmost importance.

Finally, questionnaire survey research requires the operationalization of the investigated concepts. Although previous empirical studies (see Chapter 3.3) shed light on individuals' perspectives on corporate actions that go beyond the economic rationale, to the best of the author's knowledge, none of these studies has applied a measurement scale that operationalizes the concept of corporate sustainability attitudes as defined in this dissertation. Instead, empirical research has been characterized by disparate measurement scales. In addition, most of the identified empirical studies have examined to what extent individuals perceive corporate social responsibilities and business ethics as a company's obligation to society. The present dissertation is not interested in investigating attitudes toward CS as a company's duty, but instead investigates individuals' attitudes concerning the strategic importance of sustainable business practices. Concluding, the field of corporate sustainability research lacks a rigorously developed scale that measures attitudes toward the relevance of the three corporate sustainability spheres on companies' long-term success.

1.2 Research Objectives and Research Questions

In consideration of the identified research deficiencies, the present dissertation attempts to take a step toward examining business students' attitudes toward the importance of corporate sustainability and identify the role of individual characteristics as determinants of these attitudes. Specifically, the dissertation will adopt a threefold approach that addresses the following objectives:

(1) Developing and testing a new multi-item scale that measures individual attitudes toward the three dimensions - environmental, economic, and social - of sustainable business practices.

(2) Testing the measurement invariance of the self-developed scale cross-nationally by means of a multi-country study in the BRIC countries, Germany, and the USA.

(3) Investigating the relevance business students' from the BRIC countries, Germany, and the USA ascribe to economic, environmental and social sustainable business practices for a company's long-term success and the impact of individual cultural orientations, personal values, and socio-demographic factors on these individual mindsets.

In the pursuit of the third objective, the following research questions are addressed:

1. Do business students attribute equal importance to the economic, environmental and social sphere of corporate sustainability on companies' long-term success?

2. How do individual cultural orientations, personal values and socio-demographic factors influence attitudes toward the three dimensions of corporate sustainability?

1.3 Structure of the Dissertation

The dissertation is organized into seven chapters. Chapter 2 and 3 provide the theoretical foundation for the subsequent empirical chapters. The first part of Chapter 2 gives an overview on the concept of corporate sustainability, its origin and different perspectives. In addition, the distinction against related concepts is discussed to synthesize a working definition and conceptual model of corporate sustainability. An adequate scale to measure attitudes toward corporate sustainability can only be developed if corporate sustainability is clearly defined and delineated from related concepts. Hence, Chapter 2 sets the stage for the scale development process. The second part of Chapter 2 demonstrates the relevance of sustainability aspects in corporate practice and it reports findings from an analysis of corporate sustainability reporting in the BRIC countries, Germany, and the USA.

Thereafter, Chapter 3 provides theoretical background and identifies the theoretical link between corporate sustainability attitudes, culture, and personal values. Based on the theoretical considerations, the hypotheses on the relationship between individual cultural orientations, personal values and the attitudes toward the importance of sustainable businesses practices are proposed. Furthermore, the chapter summarizes the findings from a systematic literature review of previous empirical studies on attitudes toward sustainable and responsible business conduct. Besides the discussion of relevant empirical findings, the studies are examined with respect to their applied measurement instruments. The assessment of the potential usefulness of existing scales, or scale items, for the measurement of corporate sustainability attitudes aided the subsequent development of the measurement scale.

Based on the theoretical foundations and insights from existing empirical studies, Chapter 4 proceeds with the development of the Corporate Sustainability Attitude scale (hereafter re-

ferred to as CSA scale), including item generation, pre-tests, revision of the scale and pilot study test and retest to validate the CSA scale. The CSA scale is a self-report measurement scale that assesses attitudes with respect to the importance of environmental, economic, and social corporate sustainability for the long-term success of companies.

Subsequently, the newly developed CSA scale is applied in its first large scale survey study in Germany in Chapter 5. The chapter provides further tests on the reliability and validity of the CSA scale. Thereafter, it reports findings on the relevance German business students attached to the three spheres of corporate sustainability and tests the predictive power of individual cultural orientations and personal values on the three dimensions of corporate sustainability attitude.

Chapter 6 proceeds analogously to Chapter 5. However, it extends the study to an international scope. The results of a multi-country empirical study among business students in Brazil, China, Germany, India, Russia, and the USA are reported, including tests on measurement invariance of the CSA scale. The thesis concludes with Chapter 7, summarizing and discussing the main findings, highlighting theoretical and practical implications, as well as possible limitations of the conducted study. Moreover, it gives an outlook for future research.

2 Conceptual Foundation of Corporate Sustainability

Despite the ubiquitous discussion of the corporate sustainability concept in academia and corporate practice as being a panacea of successful firms, neither a universally excepted definition of the complex and multi-dimensional concept nor a clear understanding on how to achieve CS has yet emerged. One of the reasons for this is that different research fields have approached CS from a variety of perspectives. These varied perspectives have led to diverse and sometimes conflicting conceptualizations that are then applied in very different contexts. In addition, several denominations, including corporate sustainability, sustainable business practices, sustainable corporate management, corporate sustainability management, or sustainable corporate governance and the simplified equation with longevity, have attributed to the difficulty of defining CS. In these various denominations, CS ranges from being a vague, meaningless concept to an overloaded normative concept that attempts to capture a multitude of different objectives that are interdependent and at times conflicting. To further complicate matters, CS is commonly used interchangeably with related, but to some extent differing concepts, among others, corporate (social and environmental) responsibility, corporate citizenship, corporate governance, business ethics, or the concept of shared value. The lack of a common understanding does not only impede the comparability of academic research on CS. It also discourages business managers who wish to implement a program of CS. Only with a clear conceptualization and operationalization in their mind, can managers and employees implement sustainable business practices and measure corporate sustainability effectively.

Notwithstanding the prevalent deficiencies, this chapter intends to derive a clear working definition and conceptual framework of CS based on existing literature. This framework will act as the foundation for the scale development in Chapter 4. The remainder of the chapter will proceed as follows. First, key perspectives on CS present in current academic research and in corporate practice will be discussed, followed by an overview of established CS definitions and the proposition of a working definition for this dissertation. Following that discussion, the similarities as well as distinctions of CS to related concepts will be briefly discussed, setting the stage for the suggestion of a conceptual framework of CS. Completing Chapter 2, the relevance of CS in corporate practice, including companies' motives to expedite sustainable business practices, as well as insights in the current international development of non-financial TBL reporting, will be discussed in the last subchapter. Thereby, findings from previous studies are complemented by new insights from an analysis of TBL reporting in the BRIC countries, Germany, and the USA.

2.1 Origin and Perspectives of Corporate Sustainability

The concept of corporate sustainability has evolved after and is based on the popularization of the sustainable development concept. This term came into widespread use after 1987, when

the World Commission on Environment and Development (WCED), also referred to as the Brundtland Commission, published the Brundtland Report *Our common future* (Montiel, 2008, p. 254). The report stated that *"sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"* (WCED, 1987, p. 43). Although researchers agree on the noticeable influence of the WCED's sustainable development definition on conceptualizations of corporate sustainability (see e.g. Garriga & Mele, 2004, pp. 61-62; Gladwin, Kennelly, & Krause, 1995, p. 876; Grunwald & Kopfmüller, 2006, pp. 20-21; Montiel, 2008, pp. 254-256), slightly different interpretations, which have been introduced over the course of the last 25 years, have contributed to the blurred character of the CS concept. While the Brundtland report originally spoke of environmental sustainability as a means to economic and social development (WCED, 1987, p. 43), later contributions in the field of sustainability research increasingly recognized sustainability as a three-dimensional concept that is comprised of an environmental, social, and economic dimension. For instance, the definition proposed by the World Business Council for Sustainable Development (WBCSD), explicitly acknowledged the three dimensions by postulating that sustainable development *"requires the integration of social, environmental and economic considerations to make balanced judgments for the long-term"* (WBCSD, 2000, p. 2).

The WBCSD (2000), moreover, made reference to the link between corporate decision-making and sustainable development, pointing out that sustainable development is strongly contingent not only on government involvement, but especially on corporate contribution (p. 2). The importance of the corporate role in sustainable development has been abundantly discussed in the literature (see e.g. Dyllick and Hockerts, 2002; Gladwin et al. 1995; Schaltegger, 2012; Shrivastava, 1995, Wheeler, Colbert, & Freeman, 2003). In line with the core statement of the recent Rio+20 United Nations Conference on Sustainable Development, according to which companies are the key drivers for sustainable development (UNCSD, 2011), several researchers have argued that corporations are the only players in the globalized world that are endowed with the necessary resources, technologies, power and, last but not least, the incentive to substantially expedite the necessary changes to reach overall societal sustainability (Elkington, 1997, p. 71; Hart, 1997, p. 67; Jones, 2006; p. 64). Apart from some neoclassical economists, there is widespread and increasing support in academia and practice on the opinion that companies are obliged to contribute to sustainable development as part of the greater society.

Over the last decades, scholars have focused on a variety of perspectives in the field of corporate sustainability, each emphasizing different elements of sustainability. The next subchapters will shed light on the key perspectives separately, including the environmental, social and economic sustainability, as well as the *triple bottom line* (TBL) approach. It should be noted

that boundaries between the perspectives are fuzzy and most works incorporate several perspectives simultaneously.

2.1.1 The Environmental Perspective of Corporate Sustainability

The theoretical and empirical link between business and environment has been intensively discussed in CS literature, including, for instance, seminal studies from Bansal (2005) on the influence of resource-based and institutional factors on corporate sustainability; Gladwin et al. (1995) on the impact of sustainable development on organizations; Hart (1995) on a natural-resource based view of the firm; Starik & Rands' article (1995) on ecological sustainability as a management concept, and Shrivastava's article (1995) on firms' role on achieving environmental sustainability, to just name a few. While some of the mentioned scholars (e.g. Starik & Rands, 1995) focused exclusively on the environmental perspective, others recognized the three dimensional nature of sustainability and discussed the environmental dimension as one element of sustainability (e.g. Bansal, 2005).

The environmental sustainability perspective is without doubt the most traditional view on CS. The reason why many scholars and practitioners emphasize the ecological view of corporate sustainability is grounded by the very first conceptualization of CS rooted in the environmental movement. While the fundamental idea of sustainability is as old as humankind, the first explicit reference to the term sustainability dates back to 1713 when Hans Carl von Carlowitz made mention of the notion of sustainability in his book *Sylvicultura Oeconomica*. He introduced the idea of sustainable forestry, which implies the principle of only harvesting the regrowing portion of lumber and not the basic stock of lumber itself. These considerations led to the formulation of the *maximum sustainable yield* concept, which intends to create a balance between limited environmental capacities and economic demands (Grunwald & Kopfmüller, 2006, p. 14), a principle that finds reflection in the tragedy of the commons (Ostrom, 1990).

Another reason why CS has generally been, and remains to some extent, associated with and limited to environmental sustainability lies in the convergence of two research fields. Research on social issues and environmental issues were previously covered by two distinct research fields and these once separate fields have recently started to converge. While social issues have been dealt with in the complex body of CSR literature, environmental issues have been grounded in environmental management and sustainability (Montiel, 2008, p. 246). A separation of social and environmental aspects was also prevalent in early corporate non-financial reports. While in the 1990s the reports used to be divided into CSR and environmental reports, the turn of the millennium brought changes in so far as companies have started to integrate their non-financial reporting into a single report usually called a responsibility report or corporate sustainability report (see Chapter 2.3.3).

In the context of environmental sustainability, one can distinguish between *strong sustainability* and *weak sustainability*. Strong sustainability emphasizes the importance of the total stock of natural resources and its composition, implicating that a destruction of natural capital, such as air, water, natural resources, and biodiversity, cannot be substituted by man-made capital, including new technologies, machines, knowledge, and infrastructure. This view is characterized by the explicit acknowledgement of finite natural resources and the awareness of natural laws such as the limited carrying capacity of ecosystems and the limited reversibility of damages caused to ecosystems through external shocks (Starik & Rands, 1995, p. 909). The proposed imperative conceptualization of strong sustainability constrains corporate economic activities by these natural limits. Practical considerations on strong sustainability pertain, for instance, to the idea of full cost accounting - an accounting approach that suggests to quantify a companies' impact on the environment and to include the costs of these external effects in the financial reports as a measure for corporate ecological sustainability (Atkinson, 2000, pp. 240-241). Taking a leading role, the company Puma, a manufacturer of sports equipment, was the first large corporation in the world that released an environmental profit and loss account (Financial Times Deutschland, 2011) attempting to quantify and determine the monetary value of the environmental externalities that the corporation and its entire supply chain have caused (Puma, 2011). The example of Puma, however, does not hide the fact of a large gap between expectations and corporate reality regarding environmental sustainability. According to Schaltegger (2012), no large corporation in the world has been able to fulfill the requirements of strong sustainability (pp. 166-167). By contrast, the notion of weak sustainability contends that solely the sum of natural capital and man-made capital matters in the end. Consequently, natural capital can be substituted by man-made capital (Atkinson, 2000, p. 237; Grunwald & Kopfmüller, 2006, pp. 37-38; Dietz & Neumayer, 2007; p. 618).

Certainly, both the concepts of weak and strong sustainability are at the extreme ends of the range of environmental sustainability. While strong sustainability requires very ambitious corporate efforts, that are most likely impossible to achieve for companies in consideration of existing trade-offs between economic and environmental objectives, weak sustainability does not go far enough to contribute to real sustainable development. Summing up the discussion, the following definition, provided by Dyllick and Hockerts (2002, p. 133), encapsulates the expectations toward environmentally sustainable firms:

> *"Ecologically sustainable companies use only natural resources that are consumed at a rate below the natural reproduction, or at a rate below the development of substitutes. They do not cause emissions that accumulate in the environment at a rate beyond the capacity of the natural system to absorb and assimilate these emissions. Finally, they do not engage in activity that degrades eco-system services."*

According to the definition, businesses are called upon to operate at a level that does not threaten the health of the ecosystem and thus does not undermine the basis of their existence in the long run. This implies an effective environmental management that considers ecological impact and acts to preserve the ecosystem. For instance, the careful use of non-renewable resources (e.g. oil, steel, coal, and rare earths), waste reduction, and prevention of air, water and land pollution all contribute to effective environmental management. Dyllick and Hockerts' definition of corporate environmental sustainability, moreover, implicitly captures the idea of sustainable development as it emphasizes the importance to preserve natural resources for future generations. In the last decades, several approaches have been developed by firms to meet the growing expectations of stakeholders on companies' ecological sustainability efforts, including e.g. improved life-cycle management, cradle-to-cradle design, measurement of the ecological footprint, a general aspiration for eco-efficiency and the adoption of environmental reporting for internal self-monitoring and external accountability. However, most of these approaches comply only with the idea of weak sustainability. Corporate sustainability reports, for instance, often describe how companies partially compensate environmental degradation caused by their operations through philanthropic projects in developing countries or other campaigns that are detached from their core business - a circumstance often referred to as green washing.

The environmental perspective of sustainability has also been promoted by several global initiatives and at different summits, including the recent Rio+20 United Nations Conference on Sustainable Development and several predecessor meetings e.g. the groundbreaking United Nations Conference on Environment and Development in Rio in 1992 and the World Summit on Sustainable Development in Johannesburg in 2002. During the recent Rio+20 conference the guiding principle of *green economy* was proclaimed - a concept that emphasizes the connection between economy and environment (UNCSD, 2011). While the majority of initiatives and principles acknowledge the equal importance of social, environmental, and economic aspects for sustainable development, a mostly ecological standpoint on sustainability remains in some organizations. For example, an ecological foundation is assumed in the Business Charter for Sustainable Development of the International Chamber of Commerce (ICC). Launched in 1991, the business charter, which has been signed by more than 2,300 companies, includes 16 voluntary principles to businesses, which are to be embraced in order to adhere to environmental sustainability. The principles stress the importance of integrating environmental sound practices into the core strategies of each company (ICC Deutschland, 2012; International Institute for Sustainable Development, 2011).

2.1.2   The Social Perspective of Corporate Sustainability

The previous section illustrated that the environmental perspective is well established in sustainability research. In comparison, the social sphere of corporate sustainability has been

mostly overlooked by scholars and business and has only recently entered the discourse on sustainability (Elkington, 1997, p. 70; Crane & Matten, 2007, p. 27, Stead & Stead, 2008, p. 73). Stead and Stead, for example, pointed out that the different sustainability approaches *"had essentially ignored the social capital of the community and the intrinsic value of employees (human capital), focusing almost entirely on the environmental dimension of sustainability"* (p. 73). Much of this negligence is owed to the fact that social aspects are dealt with in another well-established concept, namely CSR.

The social perspective of CS emphasizes the role of business as part of society and claims that companies have a social contract with society. From this perspective, the legitimization for their business operations is predicated on companies' willingness to serve the demands of a societal collective. It has been noted that this *license to operate* is undergoing changes in so far as society in many countries expects companies to not only provide goods and services efficiently, but also to also meet expectations of their internal and external stakeholders regarding socially sustainable business conduct (Carroll, 1999, p. 275; Keijzers, 2002, pp. 355-356; Isaksson & Steimle, 2009, p. 170). Keijzers (2002) pointed out that companies are increasingly held responsible for their abidance by social standards (p. 355), including workers' rights, consumer protection, as well as actions that go beyond the immediate environment in which a company operates, such as far-reaching issues of poverty, hunger, education, and human rights. It is evident that these different social issues also used to be covered under the umbrella of CSR and tackle, in the broadest sense, the aspects of social justice and equity. Consequently, corporate social sustainability can hardly be distinguished from CSR, as the word social is inherent to the latter concept. Chapter 2.2.2, therefore, provides a more in-depth discussion of the concept of CSR. Despite the similarities to CSR, a definition by Dyllick and Hockerts (2002, p. 134) attempts to summarize the most important features of socially sustainable companies:

> *"Socially sustainable companies add value to the communities within which they operate by increasing the human capital of individual partners as well as furthering the societal capital of these communities. They manage social capital in such a way that stakeholders can understand its motivations and can broadly agree with the company's value system."*

Concluding, the corporate social sustainability perspective emphasizes that corporations are members of society. As such, they bear responsibility in a social sustainable development. Similar to corporate environmental sustainability, however, it is not entirely clear which internal and external issues exactly need to be considered by businesses and to what extent. At least the social issues external to business have been defined through the Millennium Development Goals. Under the mandate of the United Nations Development Programme, the Millennium Development Goals were agreed upon by 193 UN member countries in the year 2000

with the objective target to be achieved by 2015. The eight goals, which are measured by specified indicators, include to: (1) eradicate extreme poverty and hunger, (2) achieve universal primary education, (3) promote gender equality and empower women, (4) reduce child mortality, (5) improve maternal health, (6) combat HIV/AIDS, malaria, and other diseases, (7) ensure environmental sustainability, and (8) develop a global partnership for development (United Nations Development Programme, 2012). Businesses as part of society are called upon to contribute to the achievement of these social and developmental challenges (Bansal, 2005, p. 198; Crane & Matten, 2007, p. 27).

2.1.3 The Economic Perspective of Sustainability

The concept of corporate economic sustainability, being diametrically opposed to the environmental and social perspective, confines itself to the firm's economic performance focusing on profit maximization and thus the bottom line of business operations. From this perspective, management's core duty is to ensure the efficient development, production and provision of products and services to obtain a strong competitive position in the industry, a long-term increase in share price and thus the firm's success and viability in the long run (Crane & Matten, 2007, p. 26). This narrow concept is also picked up in Dyllick and Hockerts' (2002, p. 133) definition of economically sustainable companies:

> *"Economically sustainable companies guarantee at any time cash flow sufficient to ensure liquidity while producing a persistent above average return to their shareholders."*

A broader concept of corporate economic sustainability, discussed by Crane and Matten (2007), also bears in mind the overall economic prosperity of society. Corporations have to comply with the *rules of the games* imposed on them by the institutional framework in which they operate. However, they are also able to influence existing rules and regulations, for example, through lobbying (North, 1990, pp. 3-4). Building cartels, paying bribes or using accounting tricks to pay less corporate tax might maximize short-term return. However, in the long run these economically unsustainable activities result in less money for educational purposes, healthcare, national safety and the justice system, which in turn damages and erodes the prevalent institutional framework (Crane & Matten, 2007, p. 26). Consequently, those activities are at the expense of the long-term viability of the firm. Indeed, the broader concept of economic sustainability rather aims at the legal and ethical behaviour of firms, which is congruent with the shareholder approach claiming that businesses are primarily responsible to the owners of the company and thus should focus on profitability within the current written and unwritten laws and regulations (Friedman, 1970). While already the achievement of economic sustainability alone requires well-informed and deliberate decision-making of executives, it remains questionable if the sole focus on economic sustainability alone will be suffi-

cient for overall sustainability of a business in the long run. As outlined above, changing paradigms give rise to a growing importance of environmental and social aspects.

2.1.4 The Triple Bottom Line Approach

While the interconnections between environmental, social and economic aspects had already implicitly been recognized for a long time, it was not until the turn of the millennium that companies increasingly started to think aloud of how to integrate and balance economic, environmental and social issues in their decision-making processes. The three-dimensional conceptualization of CS is better known as the triple bottom line approach[2] - a framework that intends to reframe firms' traditional focus on the financial bottom line toward a broader orientation. The term triple bottom line was originally introduced and coined by sustainability expert John Elkington who asserted that businesses need to consider and advance *environmental quality* and *social equity* while striving for profitability or what he called *economic prosperity*. Elkington's definition did not consider one of the aspects of the TBL to be more important than the others. Instead of providing a ranking of importance, he claimed that business must weigh the economic, environmental and social capital equally to live up to the TBL and thus be sustainable (Elkington, 1997, p. 397). Likewise, Baumgartner and Ebner (2010) referred to CS as micro-level actions that contribute to the macro-level goal of sustainable development; with both concepts being comprised of three dimensions, namely an economic, environmental, and social dimension (p. 77). As pointed out by Bansal (2005), each of the three dimensions constitutes a necessary, but not sufficient condition, for sustainable development. Sustainable development will only be achieved if environmental protection, economic prosperity and social justice are simultaneously considered (p. 198). As can be seen in Figure 2.1, for companies this implies a consideration of all three intertwined and mutually dependent bottom lines in order to achieve corporate sustainability; a process that contains certainly conflict potential.

The underlying notion of the TBL approach to enhance existing concepts of corporate responsibility and sustainability by combining environmental, economic, and social aspects, of course, is not completely new. However, Elkington was able to create worldwide awareness of the TBL approach in corporate practice as well as academia with his seminal publication *Cannibals with forks: The triple bottom line of 21st century business*. Over the course of the last decade, the TBL approach has gained broad acceptance and has been adopted implicitly and explicitly in both corporate practice and research. In the contemporary academic discourse, it dominates the view on corporate sustainability (see e.g. Bansal, 2005, Crane &

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[2] The TBL approach is also referred to as the *three pillars of sustainability* or *people-planet-profit* alliteration (3P) – where profit stands for the economic dimension, people refers to the social dimension, and planet can be set equal to the environmental dimension (Marrewijk, 2003, pp. 103-104).

Matten, 2007; Dyllick & Hockerts, 2002; Kleine & von Hauff, 2009; Marrewijk, 2003; Savitz & Weber, 2006).

Figure 2.1: The Triple Bottom Line

Economic

Socio-Efficiency & Effectiveness

Eco-Efficiency & Effectiveness

Corporate Sustainability

Social

Environmental

Ecological Equity & Sufficiency
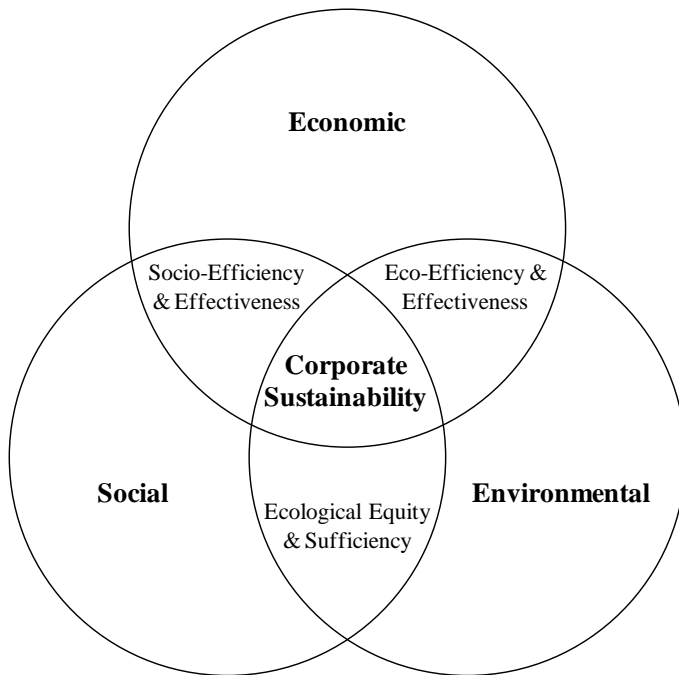
Source: modified from Dyllick & Hockerts (2002), p. 138;
Krueger, Hansen, Michl, & Welsh (2011), p. 286.

Although, the TBL definition is not very closely phrased along the lines of the WCED's conceptualization of sustainable development, it certainly is connected to the macro concept and relates to the WCED's definition of sustainability (Elkington, 1994, p. 90; Bansal, 2005, pp. 198-199). Different governmental organizations and non-governmental initiatives (see e.g. Dow Jones Sustainability Indexes, 2011; Deutscher Bundestag, 1998; Global Reporting Initiative, 2012a; Institute for Ecological Economy Research (IÖW)/future, 2009; WBCSD, 2000) have grounded their conceptualization of sustainability on the TBL notion which in turn has substantially influenced how companies respond to sustainability issues. For example, in the report *Konzept Nachhaltigkeit - vom Leitbild zur Umsetzung* the Enquete Commission of the German parliament advocated the equality of what they call the three pillars of sustainability - environmental, social, and economic - while acknowledging the interaction and conflict potential. This goes well beyond solely combining the three coexisting dimensions (Deutscher Bundestag, 1998, p. 18). Several treaties and declarations that have been agreed upon at the governmental level in the last two decades are aimed at encouraging businesses to transform into triple bottom line businesses (e.g. the Rio+20 declaration). In corporate practice, the movement toward more sustainable businesses and therewith the adoption of the TBL approach has been reflected and operationalized by means of the renowned Global Reporting Initiative (GRI) guidelines (GRI, 2012a). These principles currently serve as a common guideline for non-financial reporting internationally (see Chapter 2.3.3). Elkington's TBL

approach did not only directly shape the GRI initiative (in fact, Elkington is part of the GRI board). The Dow Jones Sustainability Indexes, the first global sustainability benchmarks launched in 1999, also embraced the TBL dimensions for their assessment criteria of corporate sustainability (Dow Jones Sustainability Indexes, 2011; GRI, 2010; Knoepfel, 2001, p. 7).

Originally thought of as an integrative accounting framework that extends conventional corporate accounting, the TBL approach, however, has not yet been fully integrated into corporate practice. The approach is closely related to the before mentioned full cost accounting approach (Atkinson, 2000) as it demands companies to measure their success against the three bottom lines, i.e. considering the impact of their economic activities on the environment and society by internalizing the negative externalities (Slaper & Hall, 2011, p. 4). While measures for the economic bottom line (e.g. sales, profits, cash flows, return-on-investment, liquidity, taxes paid, created jobs, etc.) are commonly employed in the annual financial report, there are mostly no generally accepted measurements of what constitutes environmental (e.g. air and water pollution, energy usage, produced waste) and social (e.g. labor practices, community practices, human rights, product responsibility) performance (Savitz & Weber, 2006, pp. xiii-xiv; Slaper & Hall, 2011, p. 5). In addition, even if agreed on indicators exist, as in the case of the carbon footprint that measures the emission of carbon dioxide, there is much leeway on how to quantify the exact amount of a company's emissions. In addition, the quantification of social impact is an even more difficult task to undertake. Further research is needed to solve the practical obstacles that pose a limit to proper TBL implementation.

In spite of its widespread adoption in academia and in the business community, the notion of the TBL approach is not uncontested. One point of criticism is the conceptual overload of the concept. Esty (2001) pointed out that important social aspects may be somewhat neglected in favor of the environmental sphere (p. 75). This is, however, not necessarily the case as both dimensions are intertwined with each other. A practical suggestion comes from Dyllick and Hockerts (2002) recommending to keep the economic, environmental, and social responsibilities separate at the operational level, while strategic decisions should involve simultaneous consideration of all three aspects (p. 139). Further criticism refers to the vagueness of the TBL concept. Critics argue that the concept is no more than a single bottom line extended by fuzzy promises to consider social and environmental aspects (Norman & MacDonald, 2004, p. 256). Moreover, Altman and Berman (2011) claimed that in the long run shared value is created most efficiently if executives base their decision-making on the financial bottom line of the firm, provided that policymakers target potential under-provision of public goods through the right incentives (Drucker, 1984 as cited in Altman & Berman, 2011, pp. 1-2). Summarizing the above, despite critics, a growing acceptance of CS as being characterized by the trichotomy of the economic, social, and environmental dimensions can be observed in the field of sustainability research.

2.1.5 Toward a Clearer Definition of Corporate Sustainability

Completing the overview on the different perspectives of corporate sustainability, Table 2.1 illustrates that the research on CS has culminated in a plethora of definitions. Using a literature research from Montiel (2008) as springboard, the current work extends Montiel's overview of six CS definitions to 13 definitions providing a broader scope of conceptualizations from academia and practice. It should be noted that this overview does not provide an exhaustive picture of CS definitions. However, as shown in Table 2.1, trends in defining CS can be observed. While the 1990's were dominated by definitions on ecological sustainability, the 2000er show a strong tendency toward the interpretation of CS as suggested by Elkington's approach of the TBL.

Table 2.1: Definitions of Corporate Sustainability

Definitions	References
Corporate sustainability is a business approach that creates long-term shareholder value by embracing opportunities and managing risks deriving from economic, environmental and social developments. Corporate sustainability leaders achieve long-term shareholder value by gearing their strategies and management to harness the market's potential for sustainability products and services while at the same time successfully reducing and avoiding sustainability costs and risks.	Dow Jones Sustainability Indexes (2011).
Corporate sustainability: Nachhaltige Unternehmensführung ist darauf ausgerichtet ist, die Lösungsbeiträge des Unternehmens zu den sozialen, ökologischen und ökonomischen Nachhaltigkeitsherausforderungen zu maximieren sowie dessen Schadenswirkungen und Risiken kontinuierlich zu vermindern.	IÖW/future (2009), p. 104.
Sustainability refers to the long-term maintenance of systems according to environmental, economic, and social considerations.	Crane and Matten (2007), p. 23.
Corporate sustainability is defined as the ability of a firm to nurture and support growth over time by effectively meeting the expectations of diverse stakeholders.	Neubaum and Zahra (2006), p. 111.
A sustainable corporation is one that creates profit for its shareholders while protecting the environment and improving the lives of those with whom it interacts. It operates so that its business interests and the interests of the environment and society intersect.	Savitz and Weber (2006), p. x.
Corporate sustainable development includes the three principles environmental integrity, social equity, and economic prosperity. Each of these principles represents a necessary, but not sufficient, condition; if any one of the principles is not supported, corporate development will not be sustainable.	Bansal (2005), pp. 198-200.
Sustainability is about building a society in which a proper balance is created between economic, social and ecological aims. For businesses, this involves sustaining and expanding economic growth, shareholder value, prestige, corporate reputation, customer relationships, and the quality of products and services. It also means adopting and pursuing ethical business practices, creating sustainable jobs, building value for all the company's stakeholders and attending to the needs of the underserved.	Székely and Knirsch (2005) p. 628.

Definitions	References
Corporate sustainability: development that meets the needs of the present without compromising the ability for future generations to meet their own needs.	Sharma and Henriques (2005), p. 160.
Sustainability: An ideal toward which society and business can continually strive, the way we strive is by creating value, creating outcomes that are consistent with the ideal of sustainability along social, environmental, and economic dimensions.	Wheeler et al. (2003), p. 17.
Corporate sustainability: meeting the needs of a firm's direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities etc), without compromising its ability to meet the needs of future stakeholders as well.	Dyllick and Hockerts (2002), p. 131.
Triple bottom line: Sustainable development involves the simultaneous pursuit of economic prosperity, environmental quality, and social equity. Companies aiming for sustainability need to perform not against a single, financial bottom line but against the triple bottom line.	Elkington (1997), p. 397.
Ecological sustainability: is the ability of one or more entities, either individually or collectively, to exist and flourish (either unchanged or in evolved forms) for lengthy timeframes, in such a manner that the existence and flourishing of other collectivities of entities is permitted at related levels and in related systems.	Starik and Rands (1995), p. 909.
Ecological sustainability: It can be achieved through four different mechanisms: 1. Total quality environmental management; 2. Ecological sustainable competitive strategies; 3. Technology for nature swaps; 4. Corporate population impact control.	Shrivastava (1995), p. 943.

Source: modified and extended from Montiel (2008), p. 256.

For the purpose of devising a scale that measures the attitude toward the three dimensions of CS an unequivocal definition, which comprises all key sustainability perspectives identified in Chapter 2.1 and thus captures the TBL approach, is essential. To keep up with state-of-the-art academic and corporate practice, the following definition is proposed:

> *Corporate sustainability is a corporation's contribution to overall sustainable development. It warrants the balancing of a broad multiplicity of present and future stakeholder interests in the economic, environmental, and social dimension and thus guarantees the long-term success of the corporation.*

Besides deriving a working definition of CS, a key objective of this chapter is to provide a conceptual framework of CS that integrates existing concepts on the link between business and society. Hence, it is indispensable to introduce relevant concepts. The next subchapter will, therefore, give an overview on the most prominent concepts and outline their similarities and disparities with CS.

2.2 Delineating Corporate Sustainability from Related Concepts

In the past, the perhaps most prevalent concepts and guiding principles in the context of business and society were those of *corporate social responsibility* (CSR) and the *stakeholder approach*. While CSR was the buzzword of the 90s, the concept of CS has started to dominate the practical discourse on the link between business and society since the beginning of this millennium. Leading CSR researchers (Carroll & Shabana, 2010, p. 85) have also recognized this shift from CSR to CS.

Unlike the classical shareholder view (Friedman, 1970), both CSR and stakeholder theory extend the responsibilities of companies beyond the sole focus of profit maximization. The notion that businesses have social responsibilities for the community has existed for centuries. It was, however, not until the second half of 20th century that an ongoing and growing debate on corporate responsibilities in academia, as well as in the business world, led to the emergence of different research streams that investigated firms' role in society. Since then, various interrelated, but also conflicting terminologies, concepts, theories, and models have been introduced (for an overview on the controversies see e.g. Carroll, 1999; Garriga & Melé, 2004). Figure 2.2 illustrates the approximate sequence of appearance of the most noted concepts that attempt to link business and society. In fact, the variety of concepts and definitions has created more questions than answers, making it difficult for scholars to compare their academic work and for business managers who want to implement sustainable and responsible business practices as they are left to their own discretion to disentangle the different concepts and apply them to corporate reality (Marrewijk, 2003, p. 96).

Figure 2.2: Developments in Concepts Linking Business and Society

----1950----1955----1960----1965----1970----1975----1980----1985----1990----1995----2000----2005---------2012
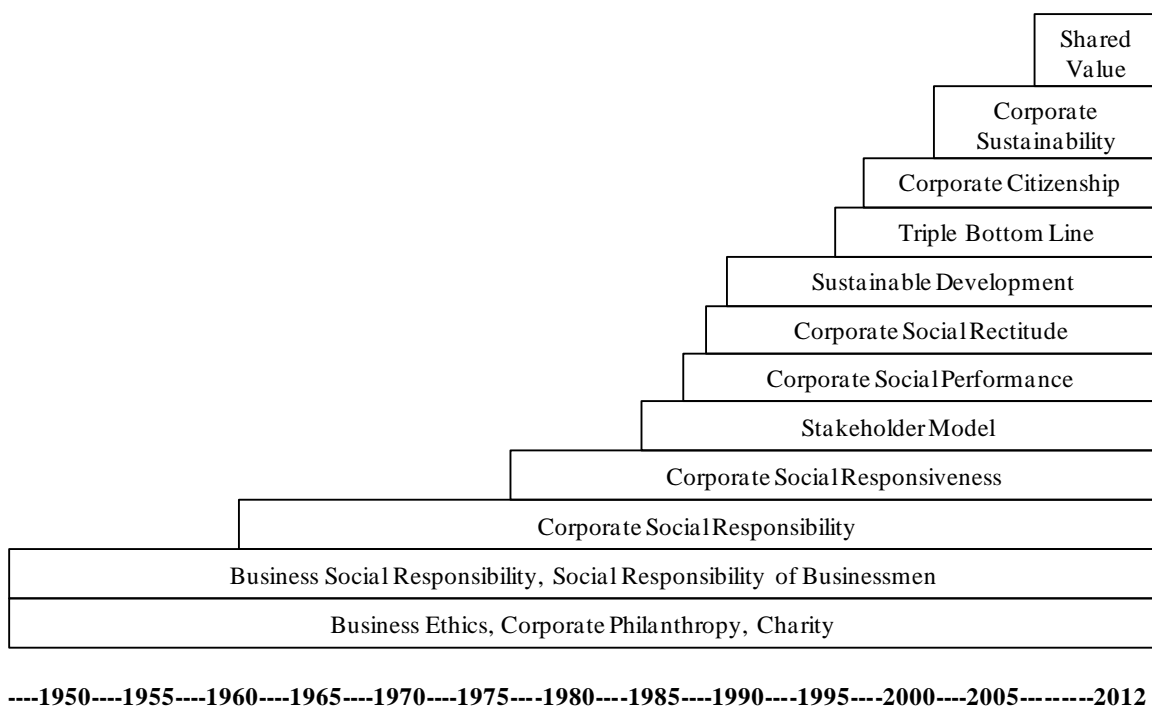
Source: modified and extended from De Bakker et al. (2005), p. 288.

To ensure a common understanding within the present dissertation regarding context, content and perspectives of the different concepts, this subchapter discusses selected concepts. The discussion is, however, confined to the most noted theoretical and practical concepts, including i) stakeholder theory, ii) corporate social responsibility, iii) corporate citizenship, and iv) shared value. Undoubtedly, a plethora of concepts other than those mentioned exist. However, discussing every existing concept in detail is beyond the scope of this dissertation. The selection of the four concepts was based on theoretical and practical reasoning. On the one hand, the concepts of stakeholder theory, corporate social responsibility, and corporate citizenship are operationalized in the majority of the reviewed empirical studies in Chapter 3. In addition, an analysis of titles of non-financial reports of the largest BRIC, German, and U.S. companies showed that most of the reports were named after the selected concepts (see Table 2.5-2.10 in the Appendix of Chapter 2). Finally, a systematic Google and Google Scholar search, using a variety of concepts as keywords, supported the predominance of the four selected concepts.

2.2.1 Stakeholder Theory

In contrast to the shareholder approach (Friedman, 1970), the stakeholder approach refers to the idea that firms' responsibility goes beyond the mere focus on shareholder interests (Clarkson, 1995; Donaldson & Preston, 1995; Freeman, 1984; Mitchell, Agle, & Wood, 1997). That implies giving (equal) consideration to the concerns of a range of individuals and groups that have a stake in that firm in order to secure long-term corporate success (Freeman, 2004, p. 231). Freeman (1984) defined stakeholders as *"any group or individual who is affected by or can affect the achievement of an organization's objectives"* (p. 5). More precisely, stakeholders can be subdivided into primary and secondary stakeholder groups. Primary stakeholders encompass individuals or groups that have a direct impact on a firm's success and survival and thus are crucial for the firm's survival. This includes, for example, shareholders, employees, suppliers, customers, and governments. Secondary stakeholder groups are those who are not directly associated with the firm, but who are indirectly affected by the firm's practices and also can indirectly influence the firm. These include, for instance, competitors, environmental and political activist groups, unions or society in general (Johnson, Scholes, & Whittington, 2008, p. 154). In the recent past, increasing transparency has indeed provided stakeholders with more power and influence. Violations committed by firms toward employees, customers or society in general have been subject to great campaigns lately as information on inappropriate corporate practices can be easily disseminated through the internet. Hence, proper stakeholder management is becoming more and more important to avoid negative press and thus the potential risk of a declining market share, sales and turnover.

Concerning the relation to other concepts that attempt to establish a link between business and society, stakeholder theory certainly has had a major influence on the conceptualization of

CSR (Carroll, 1999, pp. 284-288), but it is also grounded in the notion of and works on CS. All three perspectives of sustainability described in the previous subchapter make reference to the stakeholder theory. This is not surprising as most definitions of CS mimic the WCED definition of sustainable development, which emphasizes the importance of intergenerational justice. This definition is sometimes adapted to the corporate context, by substituting the term *generation* with *stakeholders* (see e.g. the definition of CS provided by Dyllick & Hockerts (2002) in Table 2.1). Given the fact that environmental degradation inflicted by corporate activities especially affects generations to come, firms are responsible both to present and future generations. Concluding, stakeholder aspects are ubiquitous in the discussion of CS.

2.2.2   Corporate Social Responsibility

While stakeholder theory addresses the question *''To whom are businesses socially responsible?''*, CSR research tries to find answers to the question *"What are businesses responsible for?"* (Maignan & Ferrell, 2003, p. 56). Although the notion of social responsibility of business was mentioned in academic works that date back to the early 20th century (Barnard, 1938; Clark, 1939; and Kreps, 1940 as cited in Carroll, 1999, p. 269), the first seminal academic work on the concept of CSR was published by Bowen in 1953, who stated in his book *Social responsibility of the businessman* that companies have an obligation to society (Carroll, 1979, p. 497; Matten & Moon, 2008, p. 405). Bowen, commonly called the *"father of corporate social responsibility"* (Carroll, 1999, p. 270), postulated that businessmen are obliged 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"* (Bowen, 1953, p. 6).

Following the pioneering contribution of Bowen, a great variety of literature on CSR has been published in the course of the last 60 years. A large body of research has dealt with definitions and conceptualizations of CSR and coextensive concepts, including corporate social performance, corporate social responsiveness, and corporate social rectitude (e.g. Carroll, 1979, 1991; Dahlsrud, 2008; Davis, 1960, 1973; Frederick, 1960; Garriga & Melé, 2004; Matten & Moon, 2008; McGuire, 1963; Sethi, 1975; Wood, 1991; Wartick & Cochran, 1985).[3] While early publications provided rather general definitions of CSR, Carroll (1979, 1991) attempted to systematize CSR. His widely recognized definition and empirically tested conceptual model of CSR distinguishes four responsibilities of companies, namely economic, legal, ethical, and philanthropic (formerly referred to as discretionary) responsibility. Carroll (1979) stated that *"For a definition of social responsibility to fully address the entire range of obligations business has to society, it must embody the economic, legal, ethical, and discretionary categories of business performance"* (p. 499). He claimed that the most important social respon-

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[3] For an overview on seminal CSR publications see e.g. Aguinis & Glavas (2012); Carroll (1999); De Bakker, Groenewegen & Den Hond (2005).

sibility of businesses is the economic one. That means above all other obligations businesses have to efficiently produce goods and services to be profitable. Second, businesses are required to operate within the legal constraints, and thus abide by the laws and regulations. Besides the formal institutional framework, businesses are also expected to adhere to the informal institutional framework, i.e. prevalent norms and values of the society, which are not necessarily written down and codified into law, and thus fulfill their ethical responsibilities. The legal and ethical dimensions of Carroll's model are of particular interest with respect to business conduct in a globalized world. Due to the different formal and informal frameworks across countries, what might be thought to be acceptable in one country might be completely inappropriate, or even forbidden, in another. The last corporate responsibility in Carroll's model constitutes the philanthropic actions, i.e. voluntarily helping society (Carroll, 1979, p. 500). Figure 2.3 depicts Carroll's typology in form of the well-known pyramid.

Figure 2.3: The Pyramid of CSR
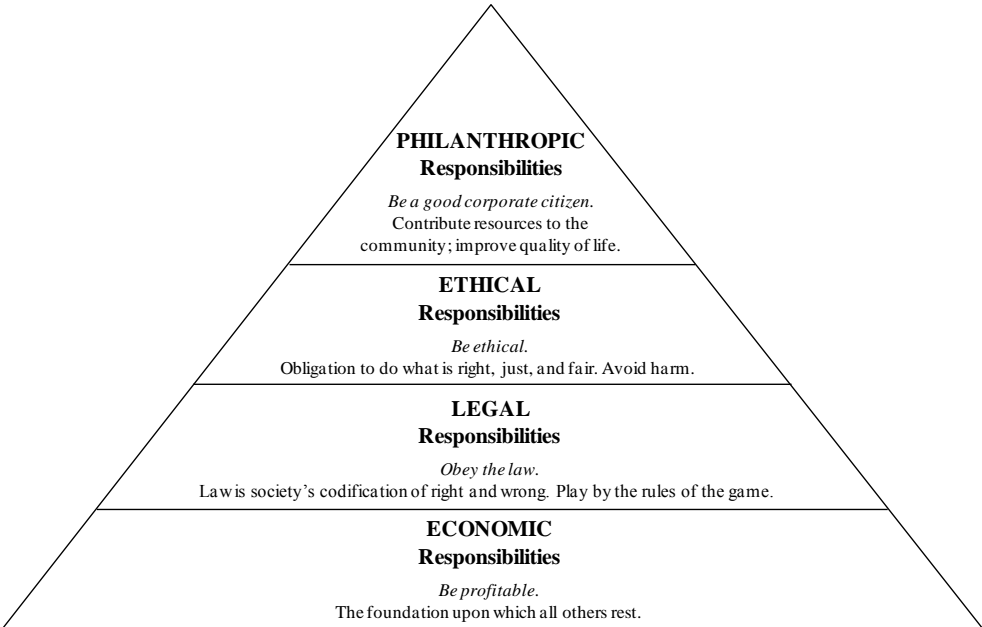
Source: Adapted from Carroll (1991), p. 42.

In contrast to Carroll (1979) and also counter-intuitively to this proposed pyramid of CSR, which could allow the conclusion of a hierarchical order of the four responsibilities, Carroll pointed out in 1991 that a socially responsible company simultaneously needs to live up to all four dimensions of CSR, including economic, legal, ethical, and philanthropic responsibilities. In practical terms, a company that attempts to conduct business responsibly should generate profits while at the same time being law-abiding, ethical, and a good corporate citizen (Carroll, 1991, p. 43). Accordingly, no hierarchical order between the four dimensions exists.

In an attempt to analyze existing CSR definitions, Dahlsrud (2008) arrived at the conclusion that despite its long history and the abandoned literature on CSR, the concept is far from be-

ing a uniformly defined concept in contemporary literature. Contrary to Carroll's renowned four-dimensional model of CSR, Dahlsrud's content analysis of CSR definitions revealed the existence of five CSR dimensions - the stakeholder, social, economic, voluntariness, and environmental dimension (p. 5). Compared to the other four dimensions, the environmental dimension of CSR found substantially less mention in the examined CSR definitions. Dahlsrud concluded further that the plethora of existing CSR definitions and related concepts is not the challenge for businesses, but the missing guidance and consensus on how to integrate CSR strategies into the development of business strategies (p. 6) - a view that is in accordance with Marrewijk (2003) who argued that *"CSR has to be broadly defined and is therefore too vague to be useful in academic debate or in corporate implementation"* (p. 96). Matten and Moon (2008) also pointed out that CSR is an *umbrella term* (p. 405) which is both overlapping and to a certain extent synonymous with such concepts as corporate citizenship, business ethics, corporate philanthropy, and sustainability.

Besides the wide array of publications on definitions and conceptualizations of CSR, a second stream of research that empirically investigates the nexus between CSR and firms' financial performance has emerged starting from the 1980s up to the present (see e.g. Aupperle, Carroll & Hatfield, 1985; Cochran & Wood, 1984; Margolis, Elfenbein & Walsh, 2007; McGuire, Sundgren & Schneeweis, 1988; McWilliams & Siegel, 2000). In turn, the findings of these studies lead to fervent discussions on the business case for CSR (see Chapter 2.3.1). Yet another important field of CSR research has studied individuals' perspectives, orientations, and attitudes toward CSR (e.g. Arlow, 1991; Holmes, 1976; Maignan & Ferrell, 2003; Orpen, 1987). Because of the close relationship to the purpose of this dissertation, Chapter 3 will provide a systematic literature review of empirical studies that deal with individual attitudes toward CSR and related concepts.

In addition, governmental bodies have dealt with the concept of CSR. For instance, the European Commission (2001) defined CSR as *"a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis"* (p. 6). In contrast to previously mentioned works, this definition also includes the environmental dimension, talks about stakeholders and refers to CSR as being voluntary; thus, companies are supposed to help society beyond the legal requirements. The Green Paper also recognizes that the endeavor to act responsible may help companies to become more competitive. Therefore, strategic CSR activities, such as investing into green technologies, enhancing human capital through training and better working conditions, as well as improving stakeholder communication, may bring a competitive advantage and thus, long-term business success (pp. 6-7). This view was once more confirmed by a recent publication of the European Commission (2011). The publication *A renewed EU strategy 2011-14 for Corporate Social Responsibility*, interestingly, also emphasized the importance of generat-

ing shared value for shareholders as well as other stakeholders (p. 6) - another concept discussed in Chapter 2.2.4 of this dissertation.

Due to its long history, CSR has influenced the development and conceptualization of other concepts while in return being influenced by them as well. Inferring from the explanations above, Carroll's CSR model does not only embrace the concept of business ethics[4]; three of its four dimensions (economic, legal, and ethical) also reflect the notion of the shareholder approach as proposed by Friedman (1970). However, the CSR model extends the economic, legal, and ethical responsibilities as described in the shareholder approach by adding a fourth dimension of philanthropic responsibility, implying that businesses also have responsibilities that go beyond profit maximization. While CSR is often referred to as a voluntary act, many definitions, in fact, emphasize the obligatory nature of CSR (see e.g. Bowen, 1953; Carroll, 1979; Matten & Moon, 2008). In contrast to Carroll (1979), who considered only the economic, legal and ethical - not the philanthropic – dimension to be imperative, Matten and Moon (2008) did not differentiate. They stated that *"at the core of CSR is the idea that it reflects the social imperatives and the social consequences of business success"* (p. 405). These standpoints claim that CSR is a compliance driven concept, requiring business to adhere to the expectations of society.

Finally, regarding the link between CSR and CS, the separate historical and paradigmatic paths may be one of the reasons why CSR and CS have been viewed as distinct concepts in the past. While the conceptualizations of CSR often focused exclusively on social issues, it neglected environmental concerns (Montiel, 2008, p. 257). Montiel's (2008) comprehensive review of academic publications on the CSR and CS concept, covering a time period between 1970 and 2005, revealed that the two concepts are more and more used synonymously and seem to be converging (p. 260). Also Loew, Ankele, Braun, and Clausen (2004, p. 12) and Marrewijk (2003, p. 102) asserted that in spite of their different histories and origin, CS and CSR have become more and more intertwined concepts. In contrast, Dahlsrud (2008) concluded that CSR in its conceptualization in literature and application in practice still mostly refers to social and not to environmental aspects (p. 5). One explanation for this could be the absence of the environmental dimension in early definitions and models (e.g. Carroll, 1979) which might have affected current definitions to not include it either.

Recently, CSR scholars and corporate practitioners have begun to distinguish between the concept of CSR as defined by Carroll and the concepts of corporate responsibility and corporate social and environmental responsibility that acknowledge both social and environmental aspects (e.g. Egri & Ralston, 2008; Furrer et al., 2010; Holtbrügge & Dögl, 2012; Orlitzky et

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[4] While a thorough discussion of the field of business ethics is beyond the scope of this dissertation, it should at least briefly find mention here. There exists a large body of literature, including research on ethical attitudes, beliefs, behavior, and decision-making in business. For an overview on empirical studies see e.g. Borkowski & Ugras (1998) or O'Fallon & Butterfield (2005).

al., 2011). This development might be attributed to the changing values of society over time and peoples' perception, which has urged business to address environmental concerns. Moreover, in contrast to CSR, which is often perceived as an act that is directed at the society without a clear cost-benefit analysis, the concept of CR, for example, is associated with strategic considerations and business practices that go beyond *doing good*, affecting a company's business model and its entire strategic orientation (Waddock, 2008, pp. 88-89). Hence, despite different phrasings, the concepts of strategic CSR, CR, and corporate social and environmental responsibility are closely associated with the notion of corporate sustainability.

2.2.3   Corporate Citizenship

Another prominent concept is that of *corporate citizenship* (CC). According to Matten and Crane (2005), *"CC describes the role of the corporation in administering citizenship rights for individuals"* (p. 173) including *"social, civil, and political rights […] granted and protected by governments"* (p. 166). In contrast, Carroll (1991) classified CC as a component of his four-dimensional CSR model. He equated CC with the philanthropic dimension of his CSR model (Carroll, 1991, p. 43). This *limited view* of CC is also in accordance with actual corporate practice, where CC is commonly associated with donating money to public charity and corporate volunteering, i.e. allowing employees a leave of absence for social and environmental projects (Loew et al., 2004, p. 12). In a later article, Carroll (1998) refrained from the limited view by setting CC equal to his CSR model (*equivalent view*). The latter perspective was also adopted by Maignan and Ferrell (2000), as well as Maignan, Ferrell, and Hult (1999), who assigned Carroll's four CSR dimensions to CC (economic, legal, ethical, discretionary). However, in later articles the authors replaced the notion of CC in favor of CSR (Maignan, 2001; Maignan & Ferrell, 2003). Overall, it can be concluded that the concept of CC, which is neither clearly defined nor differentiated from related concepts, has not been able to establish itself as an independent and distinct concept, but was overtaken by the generally accepted term CSR. This reasoning is also supported by findings derived from an analysis of corporate non-financial reporting in the BRIC countries, Germany, and the USA. The analysis of the non-financial reports of the 30 largest companies in each of these countries revealed that only five U.S. companies and one Indian company labeled their non-financial reports *corporate citizenship report* (see Appendix Tables 2.5-2.10). The concept of CC continues to play only an implicit role in companies' as many companies still make reference to the terminology in the context of their commitment in the local community, including e.g. pro bono and charity projects.

2.2.4 Shared Value

While in the past CSR was often associated with impairment of shareholder value (Friedman, 1970; Jensen, 2001; Levitt, 1958), the concept of *creating shared value* takes another path. Porter and Kramer (2006, 2011) advocated replacing the concept of CSR, as it is hardly result driven, with the more action-oriented concept of shared value. The concept builds on existing ideas that attempt to connect companies' social and environmental responsibilities with a better financial performance. Similar to the concepts of CS, strategic CSR, or CR, the focus is on achieving a competitive advantage while dealing with societal issues. Porter and Kramer argued that societal needs and concerns will determine the markets in the future and should be seen as opportunities rather than threats. Therefore, companies are well advised to identify and bring together their strengths and the opportunities that arise due to changing consumer, investor, and societal demands. Porter and Kramer provide examples of how companies have successfully created shared value both for the society and for the firm by considering environmental and social issues. From the environmental perspective this includes best practices, such as development and implementation of energy efficient technologies and operating methods, reduction of emissions, resources, and material usage. Moreover, best practices concerning the social sphere involve healthcare programs for employees, ongoing training and education of employees to offset deficiencies in the educational system and prevention of costly employee accidents. By pursuing those strategies, firms reduce their internal costs and increase productivity while also addressing societal harms indirectly (Porter & Kramer, 2006, p. 81).

The described actions, which appear to reflect business conduct in accordance with compliance-driven CSR at first glance, are certainly based on considerations that are driven by economic rather than environmental and social reasoning. Today, the majority of firms claim to be responsible toward society. However, many CSR projects and programmes are motivated by other factors than pure altruism. Firstly, they are driven by external pressure and expectations of stakeholders, implying a reactive nature of CSR. Secondly, a clear connection to firms' core business can often not be identified. In contrast, the concept of creating shared value emphasizes the strategic and proactive nature of social and environmental responsibility and involves the consideration of potential costs and benefits of the carried out projects. Hence, pursuing a shared value strategy refers to business activities that benefit the society, but at the same time help companies to enhance their competitive strength and profitability. This becomes possible if firms utilize their core competencies efficiently. Concluding, unlike the widely held perception of CSR activities as response to public pressure being discretionary and supplementary to the core business, the concept of creating shared value firstly refers to activities that are targeted at creating economic and societal value. Furthermore, these activities need to be subject to a systematic cost-benefit analysis and should be connected to the core business. Certainly, this involves a transformation of the entire value chain (Porter & Kramer, 2011, p. 16).

A very similar approach to that of Porter and Kramer is also discussed in the current sustainability literature. The concept of *embedded sustainability*, a term introduced by Laszlo and Zhexembayeva (2011a), refers to *"the incorporation of environmental, health and social value into the life cycle of a product or service with no trade-off in price or quality (i.e. with no social or green premium)"*(Laszlo & Zhexembayeva, 2011b). Similar to the claim of the shared value concept, companies ought to identify not only potential risks, but also opportunities that arise due to rapidly changing external requirements. Embedded sustainability is a strategic approach that implies strategic redirection by embedding sustainable business practices in the corporate strategy. Laszlo and Zhexembayeva (2011a) also refer to the TBL approach, as embedded sustainability requires an integrated value creation that connects environmental, social and economic spheres and creates sustainable value through increased shareholder and stakeholder value.

Summarizing the above discussion, corporate sustainability cannot only be theoretically delineated from related concepts as it entails different dimensions than the other introduced concepts; it also differs with respect to its implications for the business strategy. Companies that attempt to transform to a TBL business, are obliged to reanalyze the company's strengths and rethink their entire value chain and corporate strategy in order to exploit opportunities that arise from increased stakeholder demand for sustainability. Driven by firms' self-motivation and self-interest, CS goes beyond the purpose and scope of the mostly externally motivated, compliance-driven, and reactive concepts of CSR and CC (Salzmann, Ionescu-Somers, & Steger, 2005, p. 27). While traditional CSR and CC activities often serve stakeholder expectations as to the regard of social and environmental issues while being not necessarily profitable, concepts such as CS, CR and the shared value concept try to connect socially and environmentally desirable business activities and profitability (Schreck, 2012, pp. 68-69). The business case for CS, and thus the resolution of the conflict of environmental and social responsibility and profitability, requires reengineering and transforming existing business models and practices.

2.2.5 A Conceptual Model of Corporate Sustainability

The theoretical overview of related concepts, which dealt with business and society, revealed that most of the concepts cannot be clearly delineated from each other. In spite of the large intersections, the concepts have different origins and historical developments. CSR and CS, for example, are grounded in the notion of balancing different, to some extent competing, corporate responsibilities. However, they are distinguished by their varying scope, motivation and ambition level, which have been identified over the course of this chapter. CS as defined in this dissertation is an overarching concept that comprises CSR and other coexisting concepts as sub concepts. Figure 2.4 presents a conceptual model of CS, which accounts for the considerations presented in the previous subchapters. The proposed conceptual model is in

line with a more general observation of Marrewijk (2003) who characterized CSR as an *intermediate stage* and CS as the *ultimate goal* (p. 101), as well as Ebner and Baumgartner (2006) who suggested integrating CSR as the social strand of the three-dimensional construct of corporate sustainability (p. 13). As pointed out by Furrer et al. (2010), the legal, ethical, and philanthropic responsibilities of Carroll's (1979) model are in fact often implicitly integrated into a single social dimension. From this it follows that Carroll's four-dimensional CSR taxonomy is congruent with the economic and social dimension of the TBL approach. This view is also supported by Kleine and von Hauff (2009) who argued that CSR practices are eventually implemented based on the TBL approach. They also proposed the use of the term CS since CSR is increasingly sustainability-driven (p. 517). This dissertation, moreover, includes environmental management as a sub concept of CS. Finally, the proposed conceptual model clarifies the relationship of sustainable development and corporate sustainability by asserting sustainable development as a societal goal on a macro level and CS as the corresponding corporate goal on a micro level.

Figure 2.4: Conceptual Model of Corporate Sustainability
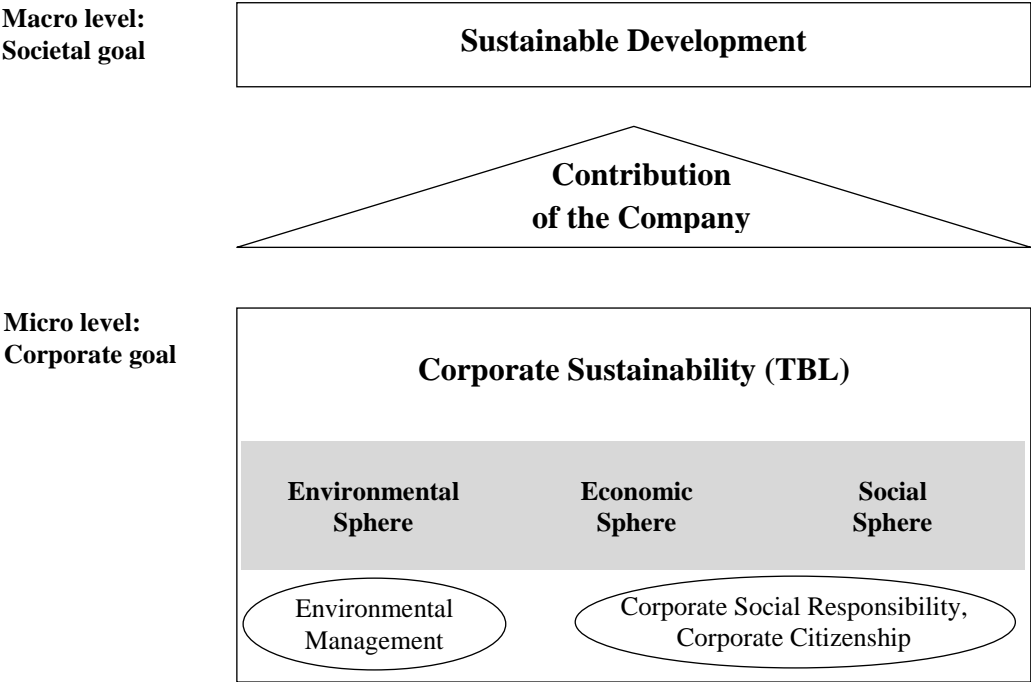
Source: modified from Loew et al. (2004), p. 13; Ebner and Baumgartner (2006), p. 13.

2.3 Practical Relevance of Corporate Sustainability

As a supplement to the theoretical insights into the CS concept, the following subchapter will illustrate the practical relevance of CS. First, potential motives of firms to implement sustainable business practices will be outlined. Second, the institutionalization of sustainability aspects, including general normative frameworks, process guidelines, and management systems will be discussed. Finally, findings of previous studies and own elaborations on GRI-based sustainability reporting will be presented.

2.3.1 Corporate Motives

Reasons for the growing attention paid to sustainability issues at the corporate level are manifold, but also interrelated. The expected climate change and environmental degradation, declining availability of natural resources, increasing resource and energy costs, and demographic changes, as well as the intensified shortage of qualified labor associated with them, have fueled a growing societal and corporate discussion that searches for resolutions to these obstacles. Bansal and Roth (2000) noted that the motivation for companies to implement sustainable business practices underlies four main drivers, namely (i) stakeholder pressures, (ii) economic opportunities, (iii) legislation and (iv) ethical motives (p. 718).

Considering the first driver, the widespread use of the internet and social networks has enabled stakeholders to observe and discuss more directly firms' activities. The transparency of corporate governance when combined with growing expectations of stakeholders has certainly added pressure on companies to advance sustainable business practices (Bansal & Roth, 2000, p. 718). Activist groups and end consumers have the power to boycott a certain product, brand, or company, resulting in a decline in sales and revenue figures. According to public discussion, even more important than the end users are business-to-business customers, investors and potential employees. Business-to-business customers increasingly demand that their suppliers provide evidence of their sustainability efforts in form of certificates. Additionally, investors, e.g. pension funds, have started to pay greater attention to environmental and social factors. Finally, firms actively talk about their sustainability projects to retain high-skilled staff and attract potential employees.

The economic opportunities that may arise due to a well-communicated and implemented corporate sustainability strategy have been widely discussed in the literature referring to the business case for CS, CSR, or CR[5]. Several studies have examined the financial advantages that may arise through advanced corporate sustainability and responsibility. These studies, however, presented mixed findings concerning the business case for CS. While older papers seldom found a link between CS and firms' financial performance (see e.g. Abbott & Monsen, 1979; Aupperle, Carroll & Hatfield, 1985; Cochran & Wood, 1984; McWilliams &

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[5] For reasons of legibility, the following chapter will not differ between CS, CSR, and CR.

Siegel, 2000), more recent studies conducted by Knoepfel (2001), Lo and Sheu (2007), and Schreck (2011) lent support to a positive link between CS and several financial indicators. These recent empirical studies showed that companies which possess sustainability strategies - measured in terms of the Dow Jones Sustainability Indexes - were found to have a higher average return on equity, higher average return on investment, and higher average return on assets (Knoepfel, 2001, p. 9), as well as a higher valuation in the financial markets (Lo & Sheu, 2007, p. 355), and a positive link with Tobin's Q (Schreck, 2011, p. 183). In addition, two meta-analyses on the link between corporate social and environmental performance and corporate financial performance found an overall positive effect (Margolis et al., 2007; Orlitzky, Schmidt, & Rynes, 2003). According to these findings, CS strategies are value increasing for companies and thus support the evidence of a business case for CS.

Despite inconsistent findings regarding the business case for CS, managers' motives to engage in sustainable business practices are certainly driven by the expectations to increase profit and thus maximize shareholder value, either through the possibility of cost savings or increased revenues[6] (Hahn & Scheermesser, 2006, p. 152; Schaltegger & Synnestvedt, 2002). In fact, enforcing stricter social and environmental standards on its business operations does not necessarily mean less profit for a company. Instead, the paradigm shift among stakeholders toward appreciating socially and environmentally sustainable business conduct certainly offers opportunities to businesses that take the lead on the way to increased social and environmental sustainability. The proactive integration of such practices into the corporate strategy undoubtedly has competitive implications. However, Hahn, Figge, Pinkse, and Preuss (2010) pointed out that corporate sustainability still involves trade-offs and between the economic, environmental, and social objects (p. 218). Nevertheless, proactive corporate sustainability management can lower potential risks, including e.g. a decline in market shares and sales due to reputation damage, innovative competitors, or product substitution. On the other hand, CS can increase a company's opportunities to enhance its reputation in the eyes of investors, (potential) customers, and (potential) employees. This in turn entails entering new markets, increasing sales and profit margins, retaining highly skilled and motivated employees, and recruiting skilled workers (Loew & Clausen, 2010, pp. 22; Schaltegger & Lüdeke-Freund, 2012, p. 6; Schreck, 2011, p. 168).

Another strong argument for the proactive approach is the pre-emption of otherwise painful regulations, fines and penalties that might be enacted by the government (Carroll & Shabana, 2010, p. 89). A very recent example from Germany would be the discussion of legally fixed quotas for women on executive boards. This government-enforced intervention very likely

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[6] Assuming increased revenues due to enhanced corporate sustainability implies a consumer demand function (Q_x) that incorporates a quality term for corporate sustainability (in addition to well-established influencing factors such as price, price of related goods, etc.). Let this quality term be denoted by S. Hence, $Q_x \equiv Q(S)$, with $\partial Q/\partial S > 0$. That means, all other things being equal, corporate sustainable business practices yield a higher demand.

will occur if companies do not voluntarily try to improve the current share. Therefore, it might be strategically superior and cheaper to address social (e.g. promotion of women, health and safety concerns) and environmental issues (e.g. scarcity of natural resources) proactively before they become a problem or before the legislation and institutional pressure take hold (Bansal & Roth, 2000, 718).

Besides this rather economic lens on arguments for CS, authors have also intensively discussed ethical and normative motives as potential drivers of sustainable and responsible business practices (Bansal & Roth, 2000, p. 718). Criticism of the win-win paradigm has been raised, arguing the current debate only considers environmental and social aspects as long as they contribute to the economic performance and thus dilute the true purpose of sustainable and responsible business activities. It remains without saying that conventional for-profit organizations, primarily, look for opportunities that serve their self-interest even in the case of socially and environmentally responsible behavior. This behavior, however, does not rule out that executives' decision-making with respect to a firm's social and environmental impact might not be guided by their ethical responsibility *"to do the right thing"* (Takala and Pallab, 2000, p. 110).

Concluding, a firm's reengineering toward more sustainability is, without a doubt, strongly driven by the company's long-term self-interest and the expectation to achieve a competitive advantage (Carroll & Shabana, 2010, pp. 88-89; Hahn & Scheermesser, 2006, p. 3). In summary, it can be inferred that managers who ignore the interplay of economic, environmental and social sustainability issues put the company's long-term success at risk. Firms need a corporate sustainability strategy that is thoroughly integrated in the overall corporate strategy. This implies a change of thinking and decision-making. While in the past, social and environmental aspects were often detached from the overall corporate strategy, they need to become an integral part of firms' values, mission, and vision (Székely & Knirsch, 2005, p. 628). In this regard, it is also indispensable to rethink strategic management theory and introduce new frameworks that consider sustainability aspects.

2.3.2 Institutionalization of Sustainability

The increasing importance of sustainability in corporate practice is reflected in the institutionalization of sustainability aspects. This includes publications of very general normative frameworks, process guidelines, and management systems that have been developed in multistakeholder processes (Ligteringen & Zadek, 2005). Most of the management systems and normative frameworks that have been released throughout the last decades are closely connected and compatible with each other. Table 2.2 provides an overview and short descriptions of the most recognized international management systems, including the ISO 9000 and ISO 14000 family published by the International Organization for Standardization (ISO),

AA1000 framework, EMAS, OHSAS 18001, SA8000, or the recently issued ISO 26000 (Bernardo, Casadesus, Karapetrovic, & Heras, 2009, 2010; Ligteringen & Zadek, 2005; Hahn & Scheermesser, 2006). Companies can seek optional third party verification for their management system compliance with the respective voluntary standard. Indeed, more than one million companies worldwide have been certified for compliance with ISO 9001 and ISO 14001, making them the most frequently used management system standards worldwide (Bernardo et al., 2009, p. 742).

Table 2.2: Overview of International Management Systems

Management system	Description	Organization (first edition)	External certification
AA1000	Series of standards to assist organizations in their efforts to become more accountable, responsible and sustainable, including the AA1000 AccountAbility Principles Standard, the AA1000 Assurance Standard and the AA1000 Stakeholder Engagement Standard	Accountability (2003)	✓
EMAS	EU Eco-Management and Audit Scheme (ISO 14001 is a fundamental component of EMAS)	EU (1995)	✓
ISO 9000	Family of voluntary standards on good quality management practices and systems	ISO (1987)	✓ (ISO 9001)
ISO 14000	Family of voluntary environmental management standards, including for example the ISO 14001 framework for environmental management systems	ISO (1996)	✓ (ISO:14001)
ISO 26000	Voluntary standard on social responsibility guidance	ISO (2010)	-
OHSAS 18001	Occupational health and safety management system	OHSAS project group (1999)	✓
SA8000	Voluntary standard; comprises nine social accountability requirements, including principles on child labor, forced labor, health and safety, freedom of association and right to collective bargaining, discrimination, discipline, working hours, compensation, and management systems	Social Accountability International (1999)	✓

Sources: AccountAbility (2012); European Commission (2012); ISO (2009, 2010, 2011); British Standards Institution (2012); Social Accountability International (2008).

Besides the above mentioned management system standards, which provide guidance on how to integrate and implement specific socially and environmentally sustainable business practices, a large number of very general international declarations and conventions exist that are frequently acknowledged by companies. These normative codes of conduct usually provide a list of rather broad principles on various topics, including environmental issues, human rights, labor standards, anti-corruption, and competition (Ligteringen & Zadek, 2005, p. 3). The most recognized ones are the Organization for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises, launched in 1976 (OECD, 2011), UN Global Compact, International Labour Organization Declaration on Fundamental Principles and Rights at

Work, ICC Business Charter for Sustainable Development, Global Sullivan Principles, and CAUX principles (Barkemeyer, Holt, Preuss, & Tsang, 2011; KPMG, 2008, p. 29). The guidelines are voluntary recommendations and thus are not legally binding. Companies commonly acknowledge them in their non-financial reports and on their websites promising to use them as guiding principles for their business activities. However, in addition to the lack of enforcement, most of these guidelines include a list of general principles that are hard to measure.

2.3.3 Trends in Non-Financial Disclosures

Besides the aforementioned management systems, normative frameworks, and historical summits, the growing number of corporate non-financial reports and an increasingly structured approach to sustainability disclosure can be taken as further indicator of firms' growing awareness toward sustainability issues, including all sectors and countries. Non-financial reports, which are in most countries still voluntary, are aimed at informing stakeholders on corporate environmental and social responsibilities and respective actions taken, e.g. firms' efforts to implement strategies that foster sustainable processes, products, and services. Thereby, the reports cover information on matters that have a direct as well as indirect impact on firms' operations (IÖW/future Ranking, 2009, p. 104). Over the course of the last years, an increasing number of firms have made use of guidelines to communicate their sustainability performance, such as the GRI sustainability reporting guidelines and the AA1000 Assurance Standard (KPMG, 2011, p. 21). The GRI guidelines, which are based on the theoretical TBL approach (Elkington, 1997), provide a comprehensive sustainability reporting framework that allows firms to demonstrate their sustainability efforts, make them comparable within the firm and between different firms. The GRI guidelines were launched by the Coalition for Environmentally Responsible Economies (CERES) and the Tellus Institute in Boston in 1997. While an early CERES framework only included environmental reporting, the first version of the GRI guidelines in 2000 comprised guidance on how to prepare a TBL sustainability report that provides standardized disclosures on economic, environmental, and social sustainability performance. Updates and revisions resulted in the most recent generation of guidelines in March 2011 - the G3.1 guidelines. The GRI has also set up coalitions with the UN Global Compact, OECD, United Nations Environment Programme, and the International Organization for Standardization (GRI, 2012b).

In fact, the number of companies that call attention to their corporate responsibility activities and sustainability initiatives by publishing reports, or providing information on their web pages, is constantly growing worldwide. In a recent study, Kolk (2008) analyzed the non-financial reporting of the Fortune Global 250 (as of July 2004) and concluded that two-thirds of the investigated companies provided information on their sustainability activities either in a stand-alone report or integrated in the annual financial report. Compared with non-financial

reporting rates of the Fortune 250 of 45 percent in 2001 (Kolk, 2003) and 35 percent in 1998 (Kolk, Walhain, & van de Wateringen, 2001), these numbers demonstrate the increasing attention of multinational enterprises to corporate accountability on environmental and social aspects of their business operations (Kolk, 2008, p. 5). The continuation of this positive trend was also supported by another large-scale study of 3400 companies from 34 countries (KPMG, 2011). The study revealed that 95 percent of the 250 largest companies published information on non-financial issues (as of 2011), which displays an increase of 14 percent compared to the last KPMG report in 2008 (pp. 6-7). KPMG infers from these results that *"corporate responsibility […] reporting has become a de facto law for business"* (p. 2).

According to Kolk's analyses (2008), not only has the number of non-financial reports increased tremendously, the scope of reporting has also changed. The investigated reports of 1998 almost dealt exclusively with environmental issues. Back then, non-financial reports were often labeled *environmental report*. While a great majority of the reports in 2001 still focused exclusively on environmental issues, the number declined to 14 percent in 2004. In fact, more than half of the examined corporations (54%) implemented an integrative approach of environmental, social and economic aspects in a stand-alone report. In addition, the wording and content of non-financial reports has changed. While in the 1990s and early 2000er most companies referred to environmental reports and corporate social responsibility reports, the wording is now shifting to the term *sustainability report*. This could be due to companies' orientation toward the GRI guidelines. The number of reports that combined non-financial information and the annual report has also increased (Kolk, 2008, p. 5). This development was already forecasted by Wheeler and Elkington (2001), who claimed that environmental and social reports would be combined into one single report in the future (p. 11).

Finally, studies that compared non-financial reporting across different regions found that in the past most reports were issued by European firms, followed by Japanese and U.S. companies, while emerging economies, such as China, Brazil, and India lagged behind (Kolk, 2008; KPMG, 2005). However, the Americas, Middle East and Africa region are increasingly catching up (KPMG, 2011). These findings provide interesting insights and can be considered as a first indicator of the overall sustainability reporting status. As this dissertation is particularly concerned with the TBL approach, including companies' social, environmental and economic performance, it would be of great interest to examine cross-national differences on TBL reporting (operationalized through GRI-based reporting). According to KPMG (2011), 80 percent of the G250 companies used the GRI guidelines as reporting framework.

An own analysis of worldwide GRI-based reporting (data was compiled from an Excel version of the GRI web database received via email on May 10, 2012) shows that approximately 2,100 GRI-reports were officially registered at the GRI website in the year 2011 (GRI, 2012c). European enterprises are far ahead with almost 1,000 sustainability reports that are in accordance with the GRI guidelines. This is a remarkable increase compared to 270 reports in

2006 (European Commission, 2011, p. 5). The rest of the GRI-based reports are distributed across the regions as follows: 350 reports in Asia, roughly 300 reports in Northern America and Latin America, respectively, and less than 100 reports in Oceania and Africa (GRI, 2012c). Based on these findings, it can be inferred that the GRI principles - as practical reflection of the theoretical TBL concept - have established themselves in the meantime as *"de-facto international standard"* (CERES, 2010), shaping the sustainability reporting landscape. Indeed, this development was already forecasted by Wheeler and Elkington (2001) who asserted that the TBL notion would shape companies' responsibility endeavor up to the integration of its principles in business unit operations in the 21st century (p. 1).

To bridge the upcoming empirical analysis of attitudes toward the importance of the three dimensions of corporate sustainability, covering the BRIC countries, Germany, and the USA (see Chapter 4 to 6), an examination of GRI-based reporting in those six countries was carried out. The data was compiled from an Excel version of the GRI sustainability disclosure database. Figure 2.5 depicts the stunning spread of GRI-based reporting in the BRIC countries, Germany, and USA between 2000 and 2011.

Figure 2.5: Development of GRI-Based Reporting from 2000 to 2011

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Brazil	1	1	5	3	7	13	17	38	71	83	141	116
China	0	1	3	1	3	3	6	8	19	57	70	144
Germany	1	7	5	6	10	17	16	34	41	50	66	92
India	0	1	3	1	4	5	6	6	22	22	29	40
Russia	0	0	0	1	1	3	5	8	11	5	13	46
USA	8	22	26	24	37	37	44	68	118	140	189	254
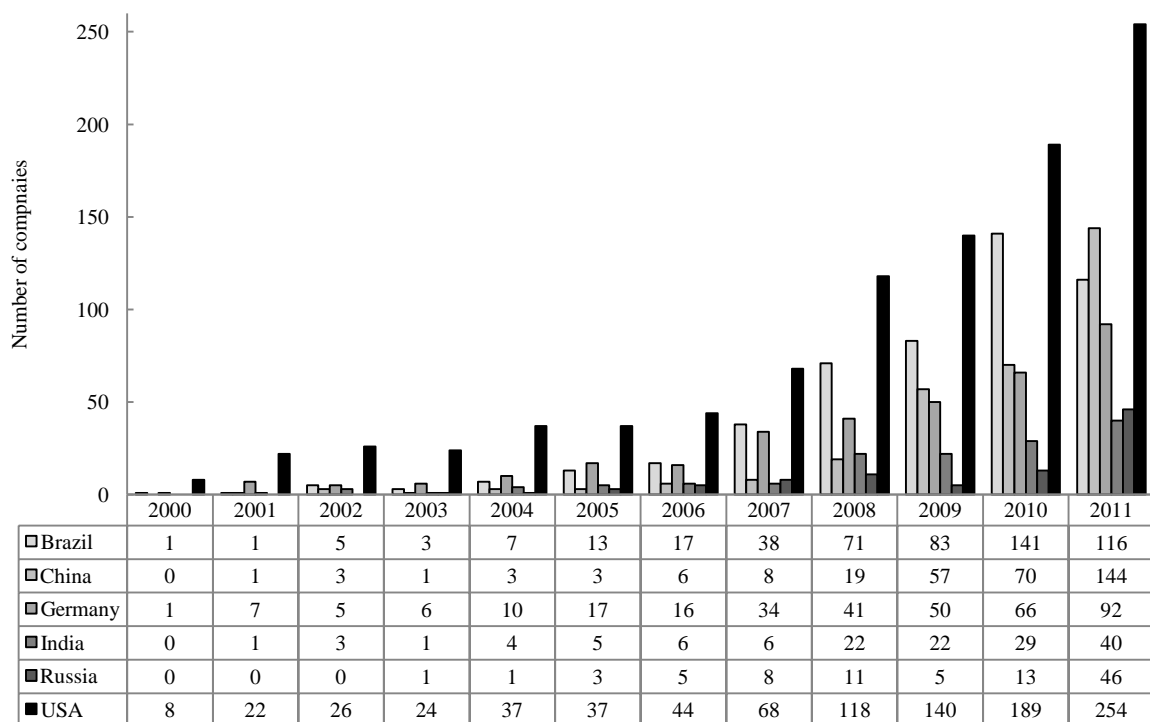
Note: Data is compiled from an Excel version of the GRI web database (GRI, 2012c).

While GRI-based reporting was virtually non-existing in the year 2000, it has experienced an enormous surge in the course of the last decade. Although the absolute amount of GRI-based reports differ substantially, with China and the USA having the most and India and Russia having the fewest reports, a trend toward GRI-based reporting can be identified across all six examined countries.[7] Companies that decide to comply with the GRI guidelines can assess the reports application level with the GRI guidelines. The application levels range from A (highest) to C (lowest), whereby a "+" indicates external assurance of the report (GRI, 2012d). It is left to firms' discretion to assure the credibility of the reported information and declared application level by third party verification. This can be done either through auditing companies or directly through the GRI. Figure 2.6 provides information on the application level of the GRI-based reports published in the year 2011. It shows that especially Chinese companies (78%), and to some extent U.S. (32%) and Russian (20%) companies, leave their reports undeclared compared to very few undeclared reports in Brazil (3%), India (10%), and Germany (12%). On the other hand, Brazilian (32%), German (35%), and especially Indian (78%), companies often declared an application level of "A", the highest possible level of compliance with the GRI guidelines.

Figure 2.6: Application Level of GRI-Based Reports
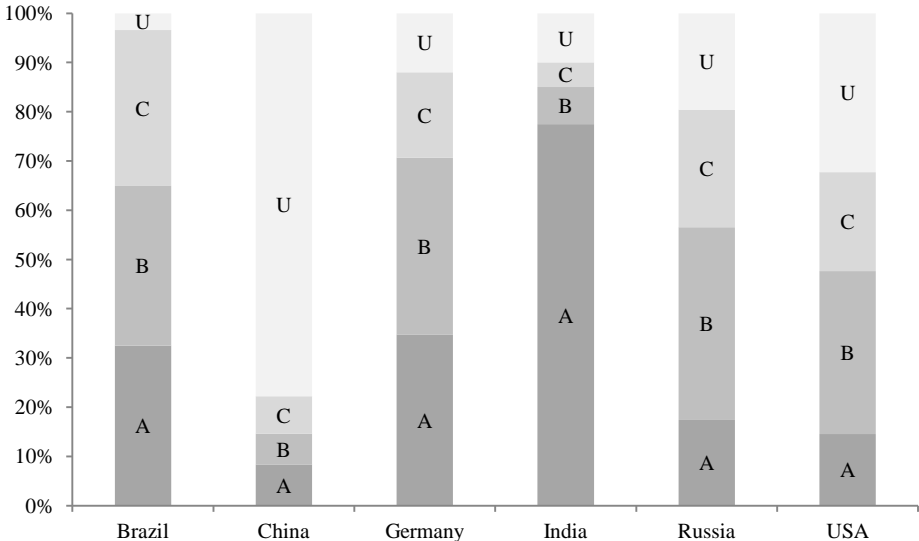
Note: Data is compiled from an Excel version of the GRI web database (GRI, 2012c) and refers to the GRI-based reports published in the year 2011. U = undeclared. A includes A and A+ reports. B includes B and B+ reports. C includes C and C+ reports.

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[7] It should be noted that absolute numbers have to be treated with caution. Setting the revenues generated by the reporting companies in relation to the overall revenues generated by all companies in each country would certainly allow drawing a more precise picture on the importance of TBL reporting in each of these six countries. However, according to S. Katus (GRI staff), the GRI does not offer information on the companies' revenue figures or any other meaningful benchmark, unless the companies voluntarily provided such data (email correspondence, September 10, 2012).

Employing a chi-squared analysis, the distribution of declared (summing up the A, B, and C report) and undeclared reports was compared between the countries. The Pearson's chi-square tests for the six countries provided the following results: The proportion of declared and undeclared reports in China differs significantly compared to Brazil ($\chi^2_{(1)} = 141.56$, $p < .001$), Germany ($\chi^2_{(1)} = 94.84$, $p < .001$), India ($\chi^2_{(1)} = 58.85$, $p < .001$), Russia ($\chi^2_{(1)} = 48.60$, $p < .001$), and the USA ($\chi^2_{(1)} = 74.32$, $p < .001$). Moreover, Brazilian companies do not only significantly differ from Chinese companies, but also from German companies ($\chi^2_{(1)} = 4.43$, $p < .05$), Russian companies ($\chi^2_{(1)} = 9.63$, $p < .01$), and U.S. companies ($\chi^2_{(1)} = 35.88$, $p < .001$) concerning the percentage of their declared and undeclared reports. No significant difference was found between Brazil and India. Finally, the USA showed significant differences in their level of application in contrast to Germany ($\chi^2_{(1)} = 13.18$, $p < .001$) and India ($\chi^2_{(1)} = 7.25$, $p < .01$). Differences between Germany, India, and Russia were found to be insignificant.

Figure 2.7 illustrates the proportion of self-declared, third-party-checked (by external auditing companies), and GRI-checked reports in the six countries for reports published in the year 2011. Again, the graph captures a very heterogeneous picture. In Brazil, China, Germany, and India approximately half of the reports are GRI-checked, but less than 10 percent of the Russian company reports are GRI-checked. Also interestingly, the percentage of self-declaration is highest in the USA (more than 60 percent) and China (more than 40 percent). Table 2.3 on the next page summarizes the numbers which Figure 2.6 and Figure 2.7 are based upon.

Figure 2.7: Declaration Status of GRI-Based Reports

Note: Data is compiled from an Excel version of the GRI web database (GRI, 2012c) and refers to the GRI-based reports published in the year 2011.

Table 2.3: Summary of GRI-Based Reporting in BRIC, Germany, and the USA in 2011

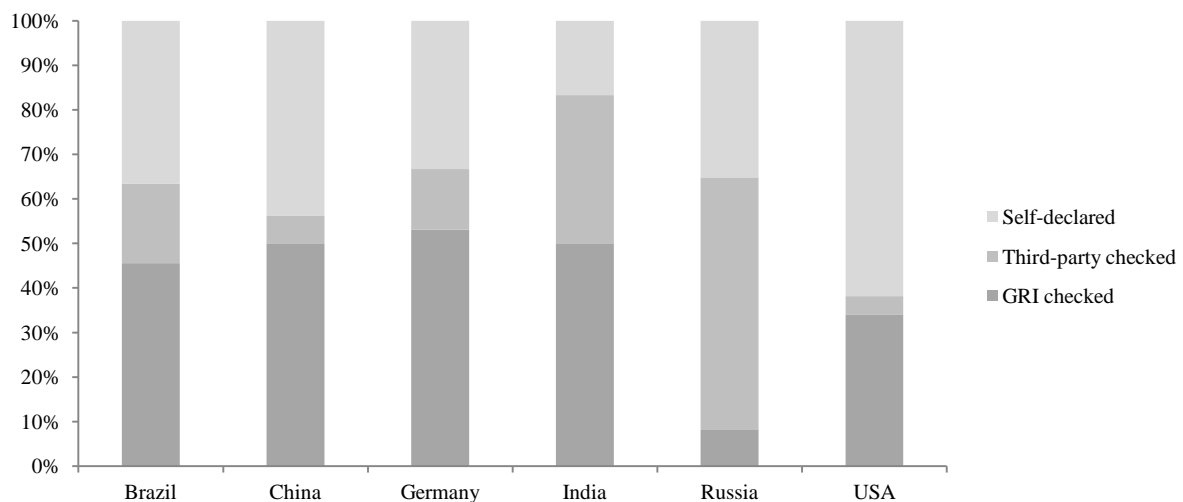| Criteria	Brazil	China	Germany	India	Russia	USA
GRI Reports	116	144	92	40	46	254
Application Level *Frequency (%)*						
A	37 (31.90)	12 (8.33)	32 (34.78)	31 (77.50)	8 (17.39)	37 (14.57)
B	38 (32.76)	9 (6.25)	33 (35.87)	3 (7.50)	18 (39.13)	84 (33.07)
C	37 (31.90)	11 (7.64)	16 (17.39)	2 (5.00)	11 (23.91)	51 (20.08)
Undeclared	4 (3.45)	112 (77.78)	11 (11.96)	4 (10.00)	9 (19.57)	82 (32.28)
Verification *Frequency (%)*						
GRI checked	51 (45.54)	16 (50.00)	43 (53.09)	18 (50.00)	3 (8.11)	59 (34.30)
Third-party checked	20 (17.86)	2 (6.25)	11 (13.58)	12 (33.33)	21 (56.76)	7 (4.07)
Self-declared	41 (36.61)	14 (43.75)	27 (33.33)	6 (16.67)	13 (35.14)	107 (62.21)

Note: Data is compiled from an Excel version of the GRI web database (GRI, 2012c) and refers to the GRI-based reports published in the year 2011. Percentages are provided in parentheses. The category "self-declared" contains only reports that exhibit an application level of A, B, or C.

As a final step in this chapter, a complementary analysis that zooms in on the GRI-based reporting of the 30 largest companies in Brazil, China, Germany, India, Russia, and the USA was conducted. For this purpose, the leading stock market indexes in each of the six countries were taken as a benchmark for the largest companies. The leading stock market indexes are the Bovespa Index in Brazil, the Shanghai Stock Exchange 50 (SSE 50) Index in China, Deutscher Aktien IndeX (DAX) in Germany, Bombay Stock Exchange (BSE) Sensex in India, Russian Trading System (RTS) Index in Russia, and Dow Jones Industrial Average (DJIA) Index in the USA. If the indexes listed more than 30 companies, which was the case in Brazil, China, and Russia, the weights of the companies in the respective index were used to select the 30 largest companies. Tables 2.5 to Table 2.10 in the Appendix of Chapter 2 provide detailed information on the reports of the 30 largest companies of each of the six countries, including the title of the GRI-based report, type of report, year of publication, the applied GRI-index, application level, and verification. Table 2.4 on the following page briefly summarizes this information.

As the figures reported in Table 2.4 show, the analysis of GRI-based reporting of the 30 largest companies closely resembles the big picture presented in Table 2.3. Twenty-five of the 30 German DAX corporations applied the GRI framework in their most recent non-financial report. Among the 30 largest companies in each country, Brazilian ($n = 20$), German ($n = 25$), and U.S. companies ($n = 23$) show quite high GRI-based reporting figures. Yet, the largest Chinese ($n = 14$), Indian ($n = 16$), and Russian companies ($n = 15$) slightly lag behind concerning GRI-based sustainability reports. Nevertheless, the figures imply a high degree of

acceptance with the GRI guidelines among the largest companies in these six countries. The analysis, furthermore, showed that the Chinese companies trail behind the other five countries regarding the indication of an application level. Only one out of the 14 Chinese GRI-based reports indicated an application level. In contrast, 14 German and 16 Indian companies announced an application level of "A". Concerning the verification of the reports, Brazilian, German, and Indian companies take a leading role, assessing the quality of their reports either through third-party assessment (audit companies), the GRI, or both. Interestingly, less than half of the U.S. companies that indicated an application level made use of third-party assessment or had their reports GRI checked. The high proportion of self-declared reports may raise suspicion concerning the quality of the reports.

Table 2.4: Summary of GRI-Based Reporting of the 30 Largest Companies

Criteria	Brazil	China	Germany	India	Russia	USA
GRI Report *Frequency (%)*	20 (66.66)	14 (46.67)	25 (83.33)	16 (53.33)	15 (50.00)	23 (76.67)
Application Level *Frequency (%)*						
A	8 (40.00)	0 (0.00)	14 (56.00)	12 (75.00)	4 (26.67)	5 (21.74)
B	7 (35.00)	1 (7.14)	8 (32.00)	1 (6.25)	4 (26.67)	10 (43.48)
C	4 (20.00)	0 (0.00)	0 (0.00)	0 (0.00)	4 (26.67)	2 (8.70)
Undeclared	1 (5.00)	13 (92.86)	3 (12.00)	3 (18.75)	3 (20.00)	6 (26.09)
Verification *Frequency (%)*						
GRI checked	9 (47.37)	1 (100.00)	15 (68.18)	7 (53.85)	0 (0.00)	4 (23.53)
Third-party checked	7 (36.84)	1 (100.00)	16 (72.73)	12 (92.31)	7 (58.33)	5 (29.41)
Self-declared	6 (16.67)	0 (0.00)	3 (13.64)	1 (7.70)	5 (41.67)	10 (58.82)

Note: Data is compiled from the GRI web database (GRI, 2012e) and refers to the GRI-based reports published most recently. Percentages are provided in parentheses. Some companies were both GRI- and third-party checked. Therefore, the percentage of the different kinds of verification does not necessarily sum up to 100 percent. The category "self-declared" contains only reports that exhibit an application level of A, B, or C.

The undertaken analysis, certainly, does not allow drawing a conclusion on non-financial reporting practices beyond the GRI-based reporting. Spot-checks on companies websites, however, yielded evidence that most large companies in the BRIC, Germany, and the USA report at least on some aspects of corporate sustainability. However, the scope of reporting varies among the companies. While some only include a small section about sustainability in their annual report or publish information on their web pages, others have non-financial reports that are, however, not in line with GRI recommendations. Summarizing the above, non-financial reporting in general, and GRI-based reporting in specific, is a rather new trend that took hold at the turn of the millennium. The increasing number of sustainability reports and compliance with international reporting standards, especially the GRI guidelines, are indicative of an in-

creasing awareness. However, the reports can only serve as proxies for actual business behavior. Furthermore, it remains to be seen if companies will merge their annual report and sustainability report as recommended by the GRI guidelines (GRI, 2012a). In fact, integrated reporting of all three spheres of corporate sustainability and further integration of sustainability into the core processes and company strategy first requires integrated thinking of the individuals in charge.

Concluding, Chapter 2.1 discussed four key perspectives of CS, namely environmental, social, and economic CS, as well the TBL approach. Thereafter, a working definition of CS, based on existing definitions, was presented. In Chapter 2.2, selected concepts related to CS were discussed. More precisely, these concepts were the stakeholder approach, CSR, corporate citizenship and the shared value concept. After delineating CS from these four concepts, a conceptual framework of CS, which illustrates the three dimensions of CS and its link to sustainable development, was proposed. Completing Chapter 2, the last subchapter discussed the relevance of the CS concept in corporate practice, identifying companies' motives to expedite sustainable business practices. In addition, findings from previous studies and an own analyses regarding the international development of TBL reporting revealed an increasing application of the GRI guidelines.

Appendix to Chapter 2

Table 2.5: GRI-Based Reporting of the 30 Largest Companies in Brazil

Company	Title of non-financial report	Type of report	Year published	GRI index applied	Application level	Third-party checked	GRI checked
AmBev	Sustainability Report 2009	Stand alone	2010	GRI-G3	B		
BM&FBovespa	Annual Report 2011	Integrated	2012	GRI-G3	C		✓
BR Malls	*No report found*						
Banco Bradesco	Sustainability Report 2010	Stand alone	2011	GRI-G3	A+	✓	
Banco do Brasil	Annual Report 2010	Integrated	2011	GRI-G3	A+	KPMG	✓
BRF (Brasil Foods)	Annual Sustainability Report 2010	Stand alone	2011	GRI-G3	B		
CCR	Sustainability Report 2008	Stand alone	2009	GRI-G3	B		
Cemig	Annual and Sustainability Report 2010	Integrated	2011	GRI-G3	A+	✓	
Cia. Hering	2006/2007 Sustainability Report	Stand alone	2008	GRI-G3	U		
Cielo	*No report found*						
Cyrela Brazil Realty	*No report found*						
Gafisa	Annual & Sustainability Report 2010	Integrated	2011	GRI-G3	C		
Gerdau	*No report found*						
HYPERMARCAS	*No report found*						
Itaúsa	Annual Sustainability Report 2010	Integrated	2011	GRI-G3	B		✓
Banco Itaú	Annual Sustainability Report 2009	Stand alone	2010	GRI-G3	A+		✓
Lojas Renner	Report 2011	Stand alone	2012	GRI-G3	B		✓
MMX Mineracao e Metalicos	*No report found*						
MRV Engenharia	*No report found*						
OGX Petroleo	*No report found*						
Oi (OISA)	Annual Sustainability Report 2011	Stand alone	2012	GRI-G3	C		✓

Company	Title of non-financial report	Type of report	Year published	GRI index applied	Application level	Third-party checked	GRI checked
PDG Realty	*No report found*						
Petrobras	Sustainability Report 2010	Stand alone	2011	GRI-G3	A+	✓	
Redecard	Sustainability Annual Report 2011	Integrated	2012	GRI-G3.1	B		✓
Rossi Residencial	2010 Sustainability Report	Stand alone	2011	GRI-G3	C		
Banco Santander (Brasil)	Annual Report 2010	Integrated	2011	GRI-G3	A+	Deloitte	✓
CSN Companhia Siderúrgica Nacional	*No report found*						
TIM Participações	Sustainability Report 2010	Stand alone	2011	GRI-G3	B+	✓	
Usinas Siderúrgicas de Minas Gerais (USIMINAS)	2009 Sustainability Report	Stand alone	2010	GRI-G3	A		
Vale	Sustainability Report 2010	Stand alone	2011	GRI-G3	A+	KPMG	✓

Note: Data is compiled from GRI (2012e); Bovespa Index (2012). The 30 largest companies were selected from the Bovespa Index based on their weight in the index. If the name of the third party assurance firm was available, it was provided. U = undeclared.

Table 2.6: GRI-Based Reporting of the 30 Largest Companies in China

Company	Title of non-financial report	Type of report	Year published	GRI index applied	Application level	Third-party checked	GRI checked
Agricultural Bank of China	Corporate Social Responsibility Report 2010	Stand alone	2011	GRI-G3	U		
Anhui Conch Cement	*No report found*						
Bank of Beijing	*No report found*						
Bank of Communications	Corporate Social Responsibility Report 2011	Stand alone	2012	GRI referenced	U		
China Everbright Bank	*No report found*						
China Life Insurance	Social Responsibility Report 2011	Stand alone	2012	GRI-G3.1	U		
China Merchants Bank	Social Responsibility Report 2011	Stand alone	2012	GRI-G3	U		
China Minsheng Banking	*No report found*						
China Pacific Insurance	Corporate Social Responsibility Report 2011	Stand alone	2012	GRI-G3.1	U		
China Shenhua Energy	Social Responsibility Report 2011	Stand alone	2012	GRI-G3	B+	KPMG	✓
China State Construction Engineering	Sustainability Report/CSR Report 2011	Stand alone	2012	GRI-G3.1	U		
China United Network Communications	*No report found*						
China Yangtze Power	Social Responsibility Report 2011	Stand alone	2012	GRI referenced	U		
CITIC Securities	*No report found*						
Daqin Railway	*No report found*						
Guanghui Energy	*No report found*						
Haitong Securities	*No report found*						
Hua Xia Bank	Social Responsibility Report 2011	Stand alone	2012	GRI-G3	U		
Industrial and Commercial Bank of China	Corporate Social Responsibility Report 2011	Stand alone	2012	GRI-G3.1	U		
Industrial Bank	Sustainability Report 2011	Stand alone	2012	GRI-G3.1	U		

Company	Title of non-financial report	Type of report	Year published	GRI index applied	Application level	Third-party checked	GRI checked
Inner Mongolia Baotou Steel Rare-Earth Hi-Tech	*No report found*						
Inner Mongolia Yili Industrial Group	*No report found*						
Kweichow Moutai	*No report found*						
PetroChina	Sustainability Report 2011	Stand alone	2012	GRI-G3.1	U		
Ping An Insurance	Corporate Social Responsibility Report 2010	Stand alone	2011	GRI-G3	U		
Poly Real Estate Group	*No report found*						
SAIC Motor	*No report found*						
Sany Heavy Industry	*No report found*						
Shanghai Pudong Development Bank	Corporate Social Responsibility Report 2010	Stand alone	2011	GRI-G3	U		
Zijin Mining Group	*No report found*						

Note: Data is compiled from GRI (2012e); P-Shares (2012); Shanghai Stock Exchange (2012). The 30 largest companies were selected from the Shanghai Stock Exchange 50 Index (SSE 50) based on their weight in the index. If the name of the third party assurance firm was available, it was provided. U = undeclared.

Table 2.7: GRI-Based Reporting of the 30 Largest Companies in Germany

Company	Title of non-financial report	Type of report	Year published	GRI index applied	Application level	Third-party checked	GRI checked
adidas	Sustainability Report 2010	Stand-alone	2011	GRI-G3	B		
Allianz	Sustainability Performance 2011	Stand-alone	2012	GRI-G3.1	A+		✓
BASF	BASF Report 2011	Integrated	2012	GRI-G3.1	A+	KPMG	✓
Bayer	Sustainable Development Report 2011	Stand-alone	2012	GRI-G3.1	A+	Ernst & Young	✓
Beiersdorf	Sustainability Report 2010	Stand-alone	2011	GRI-G3	U		
BMW	Sustainable Value Report 2010	Stand-alone	2011	GRI-G3	A+	PWC	✓
Commerzbank	Corporate Responsibility Report 2009	Stand-alone	2009	GRI-G3	A		✓
Daimler	Facts on Sustainability 2011	Stand-alone	2012	GRI-G3.1	A+	PWC	✓
Deutsche Bank	Corporate Social Responsibility Report 2011	Stand-alone	2012	GRI-G3	A+	DNV	✓
Deutsche Börse	Corporate Responsibility 2010	Stand-alone	2011	GRI-G3	B+	KPMG	✓
Deutsche Lufthansa	Key data on sustainability within the Lufthansa Group	Stand-alone	2010	Non GRI			
Deutsche Post	Corporate Responsibility Report 2011	Stand-alone	2012	GRI-G3	B+	PWC	
Deutsche Telekom	Corporate Responsibility Report 2010	Stand-alone	2011	GRI-G3	A+	PWC	✓
E.ON	2011 Sustainability Report	Stand-alone	2012	GRI-G3	B+	PWC	
Fresenius Med Care	*No report found*						
Fresenius	*No report found*						
HeidelbergCement	Sustainability Report 2009	Stand-alone	2010	GRI-G3	U		
Henkel	Sustainability Report 2010	Stand-alone	2011	GRI-G3	B		
Infineon Technologies	*No report found*						
K+S	Corporate Sustainability Report 2010	Stand-alone	2011	GRI-G3	B		
Linde	Corporate Responsibility Report 2010/2011	Stand-alone	2011	GRI-G3	A+	KPMG	

Company	Title of non-financial report	Type of report	Year published	GRI index applied	Application level	Third-party checked	GRI checked
MAN	Corporate Responsibility Report 2011	Stand-alone	2012	GRI-G3	A+	PWC	✓
Merck KGaA	Corporate Responsibility Report 2011	Stand-alone	2011	GRI-G3	B+	KPMG	
Metro	Sustainability Progress Report 2011	Stand-alone	2012	Non-GRI			
Munich RE	Corporate Responsibility Report 2011	Stand-alone	2012	GRI-G3	B		✓
RWE	Responsibility Report 2011	Stand-alone	2012	GRI-G3	A+	PWC	✓
SAP	Sustainability Report 2011	Stand-alone	2012	GRI-G3.1	A+	KPMG	✓
Siemens	Sustainability Report 2011	Stand-alone	2012	GRI-G3	A+	PWC	✓
ThyssenKrupp	Sustainability Report 2009	Stand-alone	2009	GRI-G3	U		
Volkswagen	Sustainability Report 2011	Stand-alone	2012	GRI-G3	A+	PWC	✓

Note: Data is compiled from GRI (2012e); Reuters (2012a). The 30 largest companies were taken from the DAX. If the name of the third party assurance firm was available, it was provided. U = undeclared.

Table 2.8: GRI-Based Reporting of the 30 Largest Companies in India

Company	Title of non-financial report	Type of report	Year published	GRI index applied	Application level	Third-party checked	GRI checked
Bajaj Auto	*No report found*						
Bharat Heavy Electricals	*No report found*						
Bharti Airtel	*No report found*						
Cipla	*No report found*						
Coal India	*No report found*						
Dr Reddy's Laboratories	Sustainability Report 2010	Stand alone	2010	GRI-G3	U		
Gail India	Sustainability Report 2010-11	Stand alone	2011	GRI-G3	B+	KPMG	
HDFC Bank	*No report found*						
Hero MotoCorp	*No report found*						
Hindalco Industries	*No report found*						
Hindustan Unilever	Sustainable Development Report 2009	Stand alone	2010	GRI-G3	U		
Housing Development Finance Corporation	*No report found*						
ICICI Bank	*No report found*						
Infosys	Sustainability Report 2010/2011	Stand alone	2011	GRI-G3	A+	DNV	✓
ITC	Sustainability Report 2011	Stand alone	2011	GRI-G3	A+	Ernst & Young	✓
Jindal Steel & Power	*No report found*						
Larsen & Toubro	Sustainability Report 2011	Stand alone	2011	GRI-G3	A+	DNV	✓
Mahindra & Mahindra	Sustainability Review 2010-2011	Stand alone	2011	GRI-G3	A+	Ernst & Young	✓
Maruti Suzuki India	Sustainability Report 2010-2011	Stand alone	2011	GRI-G3	A+	DNV	
N T P C	*No report found*						

Company	Title of non-financial report	Type of report	Year published	GRI index applied	Application level	Third-party checked	GRI checked
Oil & Natural Gas Corp	Corporate Sustainability Report 2010-11	Stand alone	2011	GRI-G3	A+	Ernst & Young	
Reliance Industries	Sustainability Report 2010/11	Stand alone	2011	GRI-G3	A+	KPMG	✓
State Bank of India	*No report found*						
Sterlite Industries	Sustainability Report 2009/2010	Stand alone	2010	GRI-G3	A		
Sun Pharmaceuticals	*No report found*						
Tata Consultancy Services	Corporate Sustainability Report 2010-11	Stand alone	2012	GRI-G3.1	A+	KPMG	✓
Tata Motors	Sustainability in Motion	Stand alone	2011	GRI-G3.1	A+	DNV	
Tata Power	Sustainability Report 2010-2011	Stand alone	2011	GRI-G3	A+	Ernst & Young	✓
Tata Steel	Corporate Citizenship Report 2010-2011	Stand alone	2011	GRI referenced	U		
Wipro	Sustainability Report 2010-11	Stand alone	2012	GRI-G3.1	A+	DNV	

Note: Data is compiled from GRI (2012e); Reuters (2012b). The 30 largest companies were taken from the BSE Sensex. If the name of the third party assurance firm was available, it was provided. U = undeclared.

Table 2.9: GRI-Based Reporting of the 30 Largest Companies in Russia

Company	Title of non-financial report	Type of report	Year published	GRI index applied	Application level	Third-party checked	GRI checked
Aeroflot	*No report found*						
Bashneft	Sustainability Report 2010	Stand alone	2011	GRI-G3	U		
E.ON Rossiya	*No report found*						
FGC UES	Corporate Social Responsibility Report 2010	Stand alone	2011	GRI-G3	B+	✓	
Gazprom	Sustainability Report 2008/2009	Stand alone	2011	GRI-G3	B		
IDGC Holding	*No report found*						
Inter Rao Ues	*No report found*						
Lukoil	Sustainability Report 2009-2010	Stand alone	2011	GRI-G3.1	B+	RUIE	
Magnit	*No report found*						
Mechel	*No report found*						
MMC Norilsk Nickel	Corporate Social Responsibility Report 2010	Stand alone	2011	GRI-G3	A		
MTS (Mobile TeleSystems)	Corporate Social Responsibility Report 2010	Stand alone	2011	GRI-G3	U		
NCSP	*No report found*						
NLMK (Novolipetsk Steel)	Corporate Responsibility Report 2010	Stand alone	2011	GRI-G3	U		
Novatek	2010 Sustainability Report	Stand alone	2011	GRI-G3.1	B+	SGS	
PhosAgro	*No report found*						
Rosneft	Sustainability Report 2010	Stand alone	2011	GRI-G3	A+	Ernst & Young	
Rostelecom	*No report found*						
Rusal	*No report found*						
RusHydro	Report on social responsibility and corporate stability 2010	Stand alone	2011	GRI-G3	C		

Company	Title of non-financial report	Type of report	Year published	GRI index applied	Application level	Third-party checked	GRI checked
Sberbank	Social Report 2010	Stand alone	2011	GRI-G3	C		
Severstal	Corporate Social Responsibility Report 2010	Stand alone	2011	GRI-G3	C+	✓	
Sistema	*No report found*						
Surgutneftegas	*No report found*						
Tatneft	Sustainable Development and social responsibility report 2010	Stand alone	2011	GRI-G3	A+	Bureau Veritas	
TNK-BP	Sustainability Report 2010	Stand alone	2011	GRI-G3	A+	PWC	
Transneft	*No report found*						
Uralkali	*No report found*						
VSMPO-AVISMA	*No report found*						
VTB Bank	Social Report 2010	Stand alone	2011	GRI-G3	C		

Note: Data is compiled from GRI (2012e); Moscow Exchange (2012). The 30 largest companies were selected from the Russian Trading System (RTS) Index based on their weight in the index. If the name of the third party assurance firm was available, it was provided. U = undeclared.

Table 2.10: GRI-Based Reporting of the 30 Largest Companies in the USA

Company	Title of non-financial report	Type of report	Year published	GRI index applied	Application level	Third-party checked	GRI checked
3M	Sustainability Report 2011	Stand-alone	2011	GRI-G3	C+	TruCost	
Alcoa	2011 Sustainability Report	Stand-alone	2012	GRI - G3	A+	PWC	✓
American Express	2007/2008 Corporate Citizenship Report	Stand-alone	2008	Non GRI			
AT&T	Sustainability Report 2011	Stand-alone	2012	GRI-G3	C		
Bank of America	Corporate Social Responsibility Report 2010	Stand-alone	2011	GRI-G3	B+	SAIC	✓
Boeing	2011 Environment Report; CC Report	Stand-alone	2011	Non GRI			
Caterpillar	2010 Sustainability Report	Stand-alone	2011	Non GRI			
Chevron	2010 Corporate Responsibility Report	Stand-alone	2011	GRI-G3	U		
Cisco Systems	2011 Corporate Social Responsibility Report	Stand-alone	2011	GRI-G3.1	B		
Coca Cola	2010/2011 Sustainability Report	Stand-alone	2011	GRI-G3	B+	SGS	
E I du Pont	2011 Global Reporting Initiative Report	Stand-alone	2011	GRI-G3	B		
Exxon Mobil	2010 Corporate Citizenship Report	Stand-alone	2011	GRI-G3	U		
General Electric	2010 Citizenship Report	Stand-alone	2011	GRI-G3	A		
Hewlett Packard	2011 Global Citizenship Report	Stand-alone	2012	GRI-G3	B		
Home Depot	The Sustainability Strategy	Stand-alone	2011	Non GRI			
IBM	2011 Corporate Responsibility Report	Stand-alone	2011	GRI-G3	A		
Intel	2010 Responsibility Report	Stand-alone	2012	GRI-G3.1	A+	Ernst & Young	
Johnson & Johnson	2011 Responsibility Report	Stand-alone	2012	GRI-G3	B		
JPMorgan Chase	2011 Corporate Responsibility Report	Stand-alone	2012	GRI-G3.1	B		
Kraft Foods	2010 Report	Stand-alone	2011	Non GRI			
McDonalds	Worldwide Corporate Social Responsibility 2010 Report	Stand-alone	2011	GRI referenced	U		

Company	Title of non-financial report	Type of report	Year published	GRI index applied	Application level	Third-party checked	GRI checked
Merck	2010 Corporate Responsibility Overview	Stand-alone	2011	GRI-G3.1	A		✓
Microsoft	2011 Citizenship Report	Stand-alone	2011	GRI-G3	U		
Pfizer	2009 Corporate Responsibility Report	Stand-alone	2009	GRI-G3	B		
Procter & Gamble	2011 Sustainability Report	Stand-alone	2011	GRI-G3	U		
Travelers	*No report found*						
United Technologies Corporation	2007 Corporate Responsibility Report	Stand-alone	2008	GRI referenced	U		
Verizon Communications	10/11 Corporate Responsibility Report	Stand-alone	2011	Non GRI			
Wal-Mart	2011 Global Responsibility Report	Stand-alone	2012	GRI-G3	B		✓
Walt Disney	2010 Corporate Citizenship Report	Stand-alone	2011	GRI-G3	B		

Note: Data is compiled from GRI (2012e); Reuters (2012c). The 30 largest companies were taken from the Dow Jones Industrial Average (DJIA). If the name of the third party assurance firm was available, it was provided. U = undeclared.

3 Conceptual Foundation of Attitudes toward Corporate Sustainability

As pointed out in the previous chapter, conceptual and empirical research on CS[8] practices has been proliferating recently. Thereby, one stream of sustainability research attempts to investigate whether, and how, varying CS practices can be explained by institutional, organizational and individual level factors (Aguinis & Glavas, 2012; Williams & Aguilera, 2008). The primary focus in this dissertation will be on individual level factors. Specifically, one of the key objectives of this dissertation is to develop and validate a measurement scale that assesses individual attitudes toward the importance of CS and, subsequently, investigate individual determinants on these CS attitudes. For this purpose, Chapter 3 lays the theoretical foundation by defining and discussing conceptual links of key terms that are central to this research, namely attitudes, culture and values. Based on the theoretical foundations, hypotheses for the subsequent empirical study in Chapter 5 and 6, regarding the relationship between personal values, cultural values, and the attitude toward CS, will be proposed. The last part of Chapter 3 presents a thorough literature review on previous empirical studies that investigated attitudes toward CS and related concepts and its antecedents.

3.1 Determinants of Sustainable Business Practices

Research on determinants of CS actions can be divided into three realms - firstly, studies on the impact of macro level variables, including the legal, political, and social environment, as well as national culture (see e.g. Chapple & Moon, 2005; Jackson & Apostolakou, 2010; Kolk, 2008; KPMG, 2011; Welford, 2005); secondly, studies that deal with meso level factors, that is the industrial sector, nature of organization, ownership pattern, age and size of the firm, but also soft factors such as organization rules, -policies, and -climate (see e.g. Bansal & Roth, 2000; Jackson & Apostolakou, 2010); and lastly, studies that examine determinants at the individual level. The first two fields have been extensively discussed in the literature. However, as pointed out by several researchers (Aguinis & Glavas, 2012, p. 22; Fukukawa et al., 2007, p. 381; Kaldschmidt, 2011; Ng & Burke, 2010, p. 603; Orlitzky et al., 2011, p. 11; Swanson, 1999, pp. 517-518), only a small, but increasing number of studies have dared to open the *black box* to conduct an actor-centered analysis that examines whether, and how, factors at the individual level shape organizational behavior with respect to corporate sustainability and responsibility issues.

New institutional economics (NIE) provides a theoretical framework - Williamson's three layer model - that can be used to illustrate the relationship between these three levels, namely the institutional environment (macro level), the corporate governance (meso level) and the

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[8] As explained in Chapter 2, the term CS most closely corresponds to and encompasses the concepts of CSR, CR, CC, stakeholder theory, business ethics, etc. Hence, when referring to CS throughout the next chapters this also includes the other concepts.

individual level (micro level). As can be seen in Figure 3.1, the model shows the direct influence that the institutional framework and individual characteristics (behavioral attributes) exert on the corporate governance (Williamson, 1996, pp. 325-328). Thereby, the institutional framework is defined as *rules of the game* in a society, consisting of formal rules (e.g. laws, regulations, and constitutions), informal rules (e.g. norms, social conventions, codes of conduct, habits, traditions, and ideologies that are rooted in the national culture) and their effectiveness of enforcement. Together these three dimensions constitute the institutional matrix of a society that serves as a constraint on individual as well as organizational behavior by indicating explicitly and implicitly which behaviors are acceptable or unacceptable in a certain society (North, 1990, pp. 3-4). In contrast to the formal part of the institutional framework, the informal and implicit rules cannot be changed overnight, but evolve gradually over the long run and, therefore, provide the foundation for path dependent development (North, 1990, pp. 42-45). As shown in Figure 3.1, the institutional level, governance level, and individual level interact with each other. Consequently, the organization is not only directly affected through the institutional environment and individual (depicted by solid arrows), at the same time the corporation can indirectly influence the prevalent institutional framework (e.g. through lobbying) and individuals through feedback effects (depicted by dashed arrows) (Williamson, 1996, pp. 325-328).

Figure 3.1: Three-Layer Model
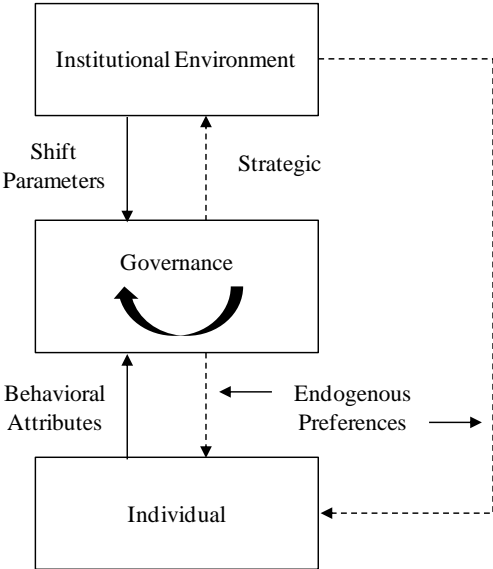
Source: Adapted from Williamson (1996), p. 326.

Based on NIE, Matten and Moon (2008) conceived a framework that takes up and extends Williamson's three layer model to analyze factors that account for the differences in CSR practices in Europe and the USA (see Figure 3.2). In line with existing literature, Matten and Moon (2008) argued that CSR is dynamic in nature - without an internationally recognized definition or a set of established criteria. As a result, CSR has been interpreted, perceived and

practiced differently across the world. Several studies (see e.g. Campbell 2007; Chen & Bouvain, 2009; Furrer et al., 2010; Matten & Moon, 2008; Williams & Aguilera, 2008) have pointed out that cross-country variations in CSR practices are grounded in historically grown political, financial, cultural, education, and labor systems, which constitute the institutional framework.[9] Country-specific institutional frameworks shape the prevalent national business system, which is reflected in Matten and Moon's model through the *nature of the firm*, the *organization of market processes*, and *coordination and control systems*.

Figure 3.2: CSR and Institutional Context of the Corporation
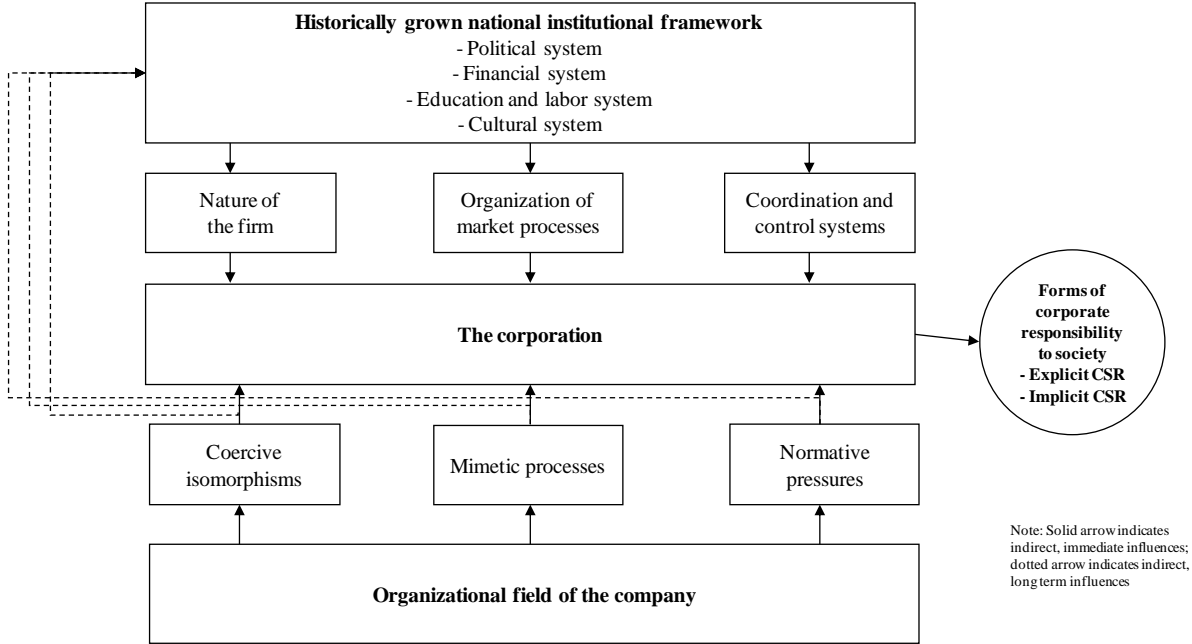
Source: Adapted from Matten and Moon (2008), p. 413.

Sustainable and responsible business practices, however, are not only influenced by the formal and informal institutional framework. Conceptual and empirical studies have suggested that individual background characteristics, including socio-demographic factors, personal values, attitudes, and concerns of managers and employees directly and indirectly inform a firm's CS engagement (Aguinis and Glavas, 2012, p. 17). As pointed out by Pedersen (2011), perceptions and mindsets of managers concerning CS engagement are shaped by the prevalent formal and informal institutional framework, while in return executives also have an impact on these institutions (p. 187). This reasoning is depicted in the lower part of the Matten and Moon model. The organizational field in which a company operates affects how firms implement CS practices through *coercive isomorphisms*, *mimetic processes*, and *normative pressures*. While coercive isomorphisms refer, for example, to self-regulatory and voluntary ini-

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[9] A similar, however simplified, framework that depicts the external determinants on CS was suggested by Baumgartner and Ebner (2010). Their framework draws on the following external factors that shape the three dimensions of corporate sustainability: legal, technological, market, societal, cultural and environmental determinants (p. 77).

tiatives (e.g. GRI guidelines, ISO standards, codes of conduct, etc.), mimetic processes relate to managers' propensity to perceive CSR practices as the right thing to do if these actions are considered as best practice in the respective industrial sector; and lastly normative pressures are, for example, exerted through scholars and business practitioners who set standards on CS. For example, business schools and universities that teach CSR and sustainability courses may influence future managers' perspectives on the relevance of social and environmental issues. The three components - coercive isomorphisms, mimetic processes, and normative pressures - are closely connected to each other and are assumed to lead to a convergence in CSR practices across countries (Matten & Moon, 2008, pp. 411-412). Nevertheless, it can be argued that a change of thinking among individuals regarding the importance of sustainability-driven management will advance only slowly due to the fact that formal and, more importantly, informal frameworks are relatively stable (Pedersen, 2011, p. 187). Inferring from the above, the organizational orientation toward CS is the sum of individual mental models, the organizational environment, and institutional rules and policies, including enforcement mechanisms as well as stimuli by means of rewards or sanctions on the part of stakeholders. Although all three levels of inquiry - the institutional, organizational and individual determinants - are essential to understand which determinants inform CS practices, this dissertation will focus on the individual level.

3.1.1 Individual Level Determinants of Sustainable Business Practices

As it was mentioned above, CS practices should not only be analyzed against the backdrop of the formal institutional framework, but one should also consider the impact of individual level attributes and the informal institutional framework. Numerous studies in the field of organizational behavior theory have investigated the link between organizational behavior and managers' and employees' background characteristics, including psychological and socio-demographic factors. The studies arrived at the conclusion that managers' decision-making and employees' execution of policies are guided not only by the prevalent institutional, industrial and organizational environment. Organizational behavior is also a reflection of company members' mental models, i.e. decisions made by managers are, to great extent, informed by their attitudes and perceptions toward what is favorable or unfavorable (see e.g. Carpenter et al., 2004; Hambrick & Brandon, 1988; Hambrick & Mason, 1984; Meglino & Ravlin, 1998).

In the context of CS, conceptual and empirical studies pointed out that firms' commitment and engagement on CS practices is contingent, among other factors, on managers' attitudes, concerns, and commitment toward socially and environmentally responsible and sustainable practices (see e.g. Elkington, 1997; Hahn & Scheermesser, 2006; Kiron et al., 2012; Marshall, Cordano, & Silverman, 2005; Muller & Kolk, 2010; O´Dwyer, 2002; Peterson, 2004; Ramus & Steger, 2000; Rosner, 1995; Weaver, Treviño, & Cochran, 1999a, 1999b). In addition, knowledge and expertise on CS are assumed to influence CS attitudes (see e.g. Stevens,

Steensma, Harrison, & Cochran, 2005; Weaver et al., 1999b). For example, Weaver et al. (1999a) provided empirical evidence of a link between top management's commitment to ethics and the scope of the firm's ethics program as well as an inclination toward a values and compliance orientation of the ethics program (p. 52). In a subsequent study, Weaver et al. (1999b) found that institutional regulations without management commitment to CSR result in *decoupled CSR activities*. The authors concluded that management commitment along with external pressure is the main driver for a proactive ethics engagement of firms and an integration of ethics programs (pp. 547-548). These findings are supported by a recent study (Kiron et al., 2012). According to empirical findings of this study, companies which have CEOs with a strong sense and dedication to sustainability issues are more likely to successfully implement sustainable business practices and obtain a financial benefit from these activities (p. 69). Concerning potential barriers to CS, two surveys conducted among North American managers revealed that obstacles for the successful integration of sustainability issues, such as environmental, health and safety topics, are still found in managerial myopia, i.e. managers do not perceive those issues to be a bottom line contribution. Including environmental and social aspects in the decision-making is often associated with an annoyance rather than an opportunity for the future prospect of the company. Even if managers perceive sustainability to be of relevance, sustainability practices are still not fully integrated into business strategy, but rather remain an *add-on* (Shelton, 1996 and Industry Week, 1998 as cited in Thomas, 2005, p. 188). Concluding, studying individuals' attitudes and perceptions toward sustainable business practices may allow drawing conclusions regarding peoples' future commitment and behavior to these topics. In order to ensure a common understanding on the concept of attitude and its link to behavioral intention and behavior, the next subchapter will provide a brief theoretical introduction.

3.1.2 Attitudes toward Corporate Sustainability

The link between individuals' attitudes and behavior is subject to research in the attitude-behavior literature (see e.g. Ajzen, 1991; Bentler & Speckart, 1979; Eagly & Chaiken, 1993, 2007; Fishbein & Ajzen, 1975). Scholars generally agree that a person's attitude culminates in responses such as judgments, emotions and eventually behavior (Ajzen, 1991; Eagly & Chaiken, 2007; Jones, 1996). In Eagly and Chaiken's (1993) words, the term attitude is defined as *"a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor"* (p. 1). Accordingly, attitudes can be described as manifestations of individuals' positive or negative feelings and evaluations toward a certain object or situation. Eagly and Chaiken (2007) extended their definition by elaborating on three key factors that constitute attitude. These are *entity*, *evaluation*, and *tendency*. Entities, also referred to as attitude objects, may be abstract (e.g. corporate culture, corporate sustainability), or concrete (e.g. office building, waste), and at the same time individual (e.g. colleagues) or collective (e.g. society) (p. 583). The second factor, the evaluative response, is related to the attitude

object in so far as the object evokes an evaluation. The third key feature tendency refers to the fact that a person's past experience on a certain attitude object may influence the favorable or unfavorable reaction toward an attitude object (pp. 584-586).

A conceptual framework that has been applied to various contexts on the attitude-behavior relationship is the *theory of planned behavior* (Ajzen, 1985, 1991). The theory suggests that the *attitude toward a certain behavior*, the *subjective norm* (perceived social pressure) and *perceived behavioral control* are good predictors for individuals' behavioral intentions and thus the motivation to behave in a certain way. According to Ajzen's model (1991), the attitude toward the behavior refers to a favorable or unfavorable evaluation of the behavior, indicating that the stronger the positive attitude toward a behavior, the stronger is a persons' intention to act accordingly (p. 188). If this theory is applied to the CS context, a favorable attitude toward sustainable business practices and its relevance for the long-term success of a company may result in the intention to implement and integrate sustainability strategies into the core business. Provided that the subjective norm and the degree of perceived behavioral control are equally high across companies of the same industry and within the same institutional environment, managers' and employees' perceptions of the relevance of corporate sustainability are decisive for their intention and commitment to implement sustainable business practices and act sustainably. Taking the example of listed companies, it can be assumed that companies of the same industry face similar institutional forces and expectations from stakeholders within one country. Thus, differences in corporate sustainability performance within one industry in one country might be explained by the managers' mindsets.

As pointed out on the previous pages, attitudes are found to be shaped by various antecedents, including for example socio-demographic factors (e.g. age, gender, socioeconomic and cultural roots, educational and/or occupational background, prior experiences), but attitudes are also influenced by value propositions held by individuals and personality traits. Applied to the CS context, these factors may have an effect on executives' attitudes, commitment and behavior toward CS as well as employees' perception of CS. To close the circle, the relationship between individual characteristics and organizational behavior, e.g. decision-making processes involving sustainability issues, certainly, is moderated and mediated by a variety of other contextual and situational factors, including imposed legal and institutional frameworks, firm's industry background, organizational culture, etc. As a complete discussion of all factors is beyond the scope of this dissertation, the focus will be laid upon the individual level, analyzing individual cultural orientation and personal values as potential antecedents of the attitude related to corporate sustainability, while controlling for selected socio-demographic factors (age, gender, CS course attendance). The next subchapter will briefly discuss how national culture and personal values have been defined and conceptualized in the literature. Moreover, hypotheses on the relationship on the variables are proposed.

3.2 The Link between Culture, Personal Values and Corporate Sustainability Attitudes

Combining the insights of theoretical and empirical research on the link between personal values, cultural values, attitudes and behavior (see e.g. Ajzen and Fishbein, 1980; Hambrick & Mason, 1984; Hofstede, 1980, 2001; Rokeach, 1973; Schwartz, 1992, 2006; Williamson, 1996), Taras, Kirkman, and Steel (2010) provided a model for future research that illustrates how cultural values and beliefs, individual level factors (e.g. demographics, values, etc.), attitudes and behavior are interlinked with each other (see Figure 3.3).

Figure 3.3: Multilevel Model of Cultural Value Research
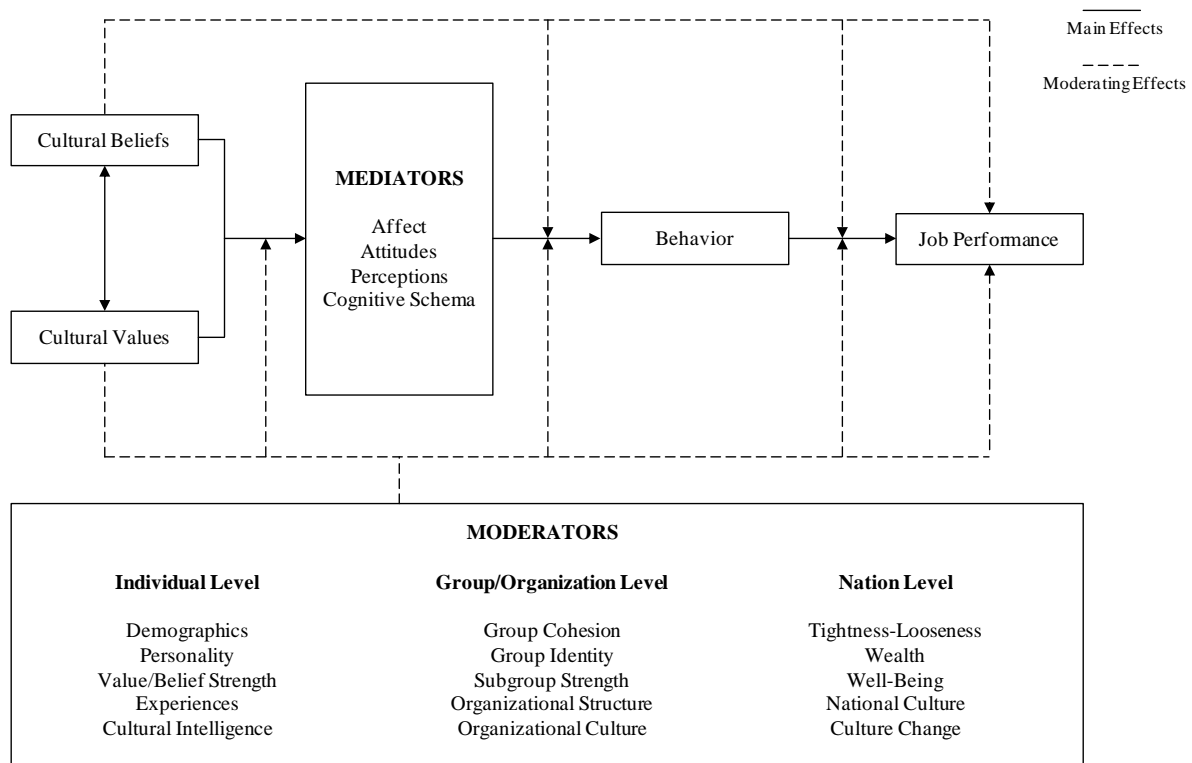
Source: Adapted from Taras, Kirkman, & Steel (2010), p. 436.

The framework, once more, underlines the link between personal values and cultural values held by individuals, corresponding attitudes, decision-making, and behavior. Applied to the context of this dissertation, exploring which individual cultural values and personal value priorities underlie and influence CS attitudes may help to understand attitudinal processes with regard to CS. It should be noted that the present dissertation examines individual cultural orientation, not national culture. Erez and Gati (2004) have proposed a multi-level model of culture consisting of the following layers: individual, group culture, organizational culture, national culture, and global culture (p. 588). In an attempt to disentangle the different levels of values, Agle and Caldwell (1999) suggested the following levels of values: individual, organizational, institutional, societal, and global values (pp. 331-332). These two approaches clearly show that the two streams of research on cultural values and personal values are characterized by a great deal of overlap. Nevertheless, we decided to include both constructs into the

empirical study in Chapter 5 and Chapter 6. In order to ensure a common understanding on the concepts of culture and personal values, the next subchapters will explain and discuss the two concepts. Based on the theoretical considerations, hypotheses will be derived on how cultural and personal values are linked to the attitude toward CS.

3.2.1 Defining and Classifying Culture

Culture has been defined in many ways. According to Hofstede (2001), it is *"the collective programming of the mind that distinguishes the members of one group or category of people from others"* (p. 9). Similarly, House et al. (2004) described culture as *"shared motives, values, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives that are transmitted across generations"* (p. 15). As a contextual variable, culture shapes individual preferences and attitudes. Individual preferences in turn precipitate behavior (Adler, 2002, pp. 17-18; Bowles, 1998). This relationship has also been pointed out by North (1990); saying that national culture constitutes part of the informal institutional environment that implicitly shapes and constrains individuals' behavior in the form of self-imposed norms and values (p. 36). Individuals unconsciously internalize prevalent cultural values of the society they were born and grew up in.

In the business context, shedding light on cultural bound values as an explanatory variable of differences in attitude and behavior has become more and more important as firms become increasingly multicultural in the ever globalizing world. Companies hire employees with different cultural backgrounds; they enter into strategic alliances or joint ventures with companies from other countries and they open branches worldwide. Regarding research on national culture, management research has, for instance, studied differences of national culture within one multinational corporation (Hofstede, 1980), the influence of differences in national culture on communication styles at work (Hall & Hall, 1990), on management relevant problem solutions (Trompenaars, 1993), on business leadership (House et al., 2004), and on work attitudes (Ronen & Shenkar, 1985).

In order to conceptualize the abstract concept of culture, identify and measure the main components of culture and compare different societies beyond their obvious artifacts (e.g. language and religion), several researchers have attempted to describe national culture by means of culture dimensions. This includes, for example, early works by Kluckhohn and Strodtbeck (1961) who proposed a culture classification with five dimensions (*human nature orientation, man nature orientation, time orientation, activity orientation, and relational orientation*), Hall (1976) and Hall and Hall's (1990) four dimensional framework which investigated differences in communication at work across cultures by means of the dimensions *high and low context*, *fast and slow messages*, *space*, *monochronic* versus *polychronic time*, and research on *individualism-collectivism* by Triandis et al. (1990, 1995). Moreover, a seven dimensional

culture framework developed by Trompenaars (1993), distinguishes between the dimensions of *universalism versus particularism*, *individualism versus communitarianism*, *neutral versus affective*, *specificity versus diffusion*, *achievement versus ascription*, *time orientation*, and *relation to nature*. The GLOBE study of House et al. (2004) is another well-known study. House et al. (2004) explored the nexus between societal culture, organizational culture and leadership. Data was collected from 17,000 managers in 951 different organizations in 62 societies (p. 3). The GLOBE study derived nine cultural dimensions based on existing literature. While the first six dimensions, *uncertainty avoidance, power distance, institutional collectivism, in-group collectivism, gender egalitarianism and assertiveness*, resemble Hofstede's culture dimensions[10], *future orientation* was derived from Kluckhohn and Strodtbeck's (1961) time orientation dimension. In addition, House et al. conceived the dimensions *performance orientation* and *human orientation* (pp. 11-13). In the same year, Inglehart, Basáñez, Díez-Medrano, Halman, & Luijkx's (2004) World Value Survey examined human beliefs and values across cultures. Based on data collected through online surveys from more than 80 countries, the author found two key cultural dimensions, namely *traditional authority versus secular-rational authority* and *survival values versus self-expression values* (Inglehart et al., 2004, p. 1, pp. 11-12). Finally, the most seminal framework on national culture dimensions was proposed by Hofstede (1980).

Hofstede's Cultural Values Framework: In his pioneering work, Hofstede (1980) collected survey data from more than 116,000 IBM employees in 40 countries (Hofstede, 1984, p. 10). By means of statistical analysis of the collected data and theoretical reasoning, he classified national culture into four dimensions, which were later extended by a fifth dimension (Hofstede & Bond, 1988)[11]. The five dimensions, which are supposed to reflect the universal dimensions of culture, are *power distance*, *individualism versus collectivism*, *uncertainty avoidance*, *masculinity versus femininity*, and *long-term orientation versus short-term orientation*. According to Hofstede (1984), variations in the degree of each culture dimension across societies can be used to explain differences in the organizational environment, including employee motivation, leadership styles, and general decision-making (p. 252). Nearly all cross-cultural research of the last decades either applied the Hofstede cultural value framework to describe culture or made reference to it (Hofstede and McCrae, 2004, p. 64; Taras et al., 2010, p. 406).[12] One of the research questions posed at the beginning of this dissertation was concerned with the predictive power of individual cultural orientations on attitudes toward CS. For the purpose of the empirical studies in Chapter 5 and Chapter 6, culture is oper-

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[10] The two dimensions gender egalitarianism and assertiveness were based on Hofstede's masculinity dimension. Institutional collectivism and in-group collectivism were informed by Hofstede's individualism versus collectivism dimension and Triandis (1995) ingroup collectivism (House et al., 2004, p. 13).

[11] Hofstede, Hofstede, & Minkov (2010) recently extended the framework by a sixth dimension, labeled *indulgence versus restraint* (pp. 235-239). This dimension, however, was not included in the empirical study of this dissertation.

[12] For an overview on empirical research on the relationship between Hofstede's cultural values framework and organizational outcomes see Kirkman, Lowe, & Gibson (2006) and Taras et al. (2010).

ationalized through Hofstede's cultural values framework (Hofstede, 1980; Hofstede, 2001; Hofstede et al. 2010). Thereby, the empirical studies apply Hofstede's classification of culture to analyze whether, and how, individual culture values predict favorable or unfavorable attitudes toward the three dimensions of CS. Hofstede's five cultural value dimensions and the proposed hypotheses regarding the link between cultural values and CS attitude are discussed below.

Power distance reflects to what extent less powerful individuals of organizations or institutions accept and anticipate inequality in power allocation. In societies with high power distance, individuals on average agree to, and even expect, inequality among its members and hierarchies. Thereby, high power distance is often reflected in an uneven distribution of power and wealth. In the business context, high power distance is reflected in the expectation that superiors must make decisions and take responsibility without consulting less powerful members of the organization. Conversely, great inequalities and obvious status symbols are generally not accepted in societies with low power distance. Subordinates expect their bosses to consult them and make conjoint decisions by means of flat hierarchies, empowerment and delegation of decisions (Hofstede et al., 2010, pp. 60-61). According to Javidan, Dorfman, Sully de Luque, and House (2006) high power distance societies are *"more stratified economically, socially, and politically"* (p. 70). As a result, organizations in these societies are characterized by a tendency to show less concern for equal opportunities for women and minorities, as well as less effort to advance personal or professional development (Carl, Gupta & Javidan, 2004, p. 534). These theoretical considerations were also supported by empirical studies, providing evidence on a negative link between high power distance and a positive attitude toward CSR (Kim & Kim, 2010; Vitell, Paolillo, & Thomas, 2003; Waldman et al., 2006) and CSR performance (Ringov & Zollo, 2007). Theoretical and empirical research on the link between the extent of power distance and environmental or economic CSA is scarce. Therefore, the dissertation refrains from posing any hypotheses on these relationships. Instead, we will use an exploratory approach to examine whether the degree of power distance is able to predict economic or environmental CSA. Concerning the link between power distance and social CSA, the following hypothesis is suggested:

Hypothesis 1a: Higher power distance is negatively related to attitudes supportive of socially sustainable business practices.

The second dimension *individualism versus collectivism* describes the relationship and the degree of interdependence between members of a society and the community. The dimension embodies a comparison of the extent to which members of a society are self-centered and adopt a more individual perspective versus the extent to which they show a greater concern for the in-group to which they belong. Members of individualist societies tend to put more emphasis on their own forthcoming and achievement as well as the freedom to do so. They

are primarily concerned with taking care of themselves, their own interests and their direct family without relying on others, whereas in collectivist societies, in-group (extended family) belonging and being a good member of society is emphasized. Caring for each other in this tight network is expected throughout life. Group welfare and social harmony are placed above the individual self-interest (Hofstede et al., 2010, pp. 90-92). Waldman et al. (2006) argued that collectivism is associated with a more favorable attitude toward CSR, *"given that CSR furthers socially based purposes"* (p. 826). In line with Waldman et al.'s reasoning, Hofstede et al. (2010) and Ng and Burke (2010, p. 606) noted that collectivism emphasizes the prevalence of group interests over personal concerns and the sharing of responsibilities. Supporting the theoretical reasoning, empirical studies provide evidence of a positive link between collectivism and a favorable attitude toward social and environmental sustainability (Kim & Kim, 2010; Ng & Burke, 2010; Waldman et al., 2006). Literature does not provide any theoretical or empirical reasoning on the link between collectivism and attitudes toward economically sustainable business practices. Therefore, the following set of hypotheses is suggested:

Hypothesis 2a: Collectivism is positively related to attitudes supportive of environmentally sustainable business practices.

Hypothesis 2b: Collectivism is positively related to attitudes supportive of socially sustainable business practices.

The third dimension *masculinity versus femininity* describes the extent to which a society values work goals versus personal values. Masculine cultures are described as tough and assertive cultures that put emphasis on self-advancement, performance-orientation, and material success. Conversely, feminine cultures are characterized by softer features such as tender-mindedness, nurturance, good relationship with others, and cooperation (Hofstede et al., 2010, pp. 135-140). Consequently, it has been argued that higher levels of masculinity are associated with a greater emphasis on economic rather than environmental and social sustainability (Hofstede et al., 2010, p. 180; Katz, Swanson & Nelson, 2001, p. 159). In addition, Ringov and Zollo (2007), who examined the effect of national culture on CSR performance, found empirical support on a negative relationship between a higher level of masculinity and corporate social performance (pp. 479-481). Accordingly, the following hypotheses are suggested:

Hypothesis 3a: Masculinity is negatively related to attitudes supportive of environmentally sustainable business practices.

Hypothesis 3b: Masculinity is negatively related to attitudes supportive of socially sustainable business practices.

Hypothesis 3c: Masculinity is positively related to attitudes supportive of economically sustainable business practices.

The degree of the fourth dimension *uncertainty avoidance* displays a society's comfortableness and ability to handle ambiguous, uncontrollable situations in the future. This dimension should, however, not be confused with risk avoidance. Individuals in high uncertainty cultures tend to be more nervous and anxious, or even threatened, regarding uncertain or unknown situations. In order to reduce ambiguity and make future more predictable, these societies generally create clearly stated rules and enforce standardization for all kinds of situations (Hofstede et al., 2010, pp. 187-191). Katz et al. (2001) argued that higher uncertainty avoidance societies (p. 159) are characterized by a greater concern for environmental issues. Considering the uncertain development of environmental and social challenges for corporations, individuals characterized by high uncertainty avoidance might attribute more importance to environmental and social sustainable business practices. In addition, empirical research found evidence on a positive link between higher levels of uncertainty avoidance and a favorable attitude toward CSR (Kim & Kim, 2010; Vitell et al., 2003). Inferring from the theoretical and empirical findings, the following set of hypotheses is stated:

Hypothesis 4a: Higher uncertainty avoidance is positively related to attitudes supportive of environmentally sustainable business practices.

Hypothesis 4b: Higher uncertainty avoidance is positively related to attitudes supportive of socially sustainable business practices.

The fifth dimension *long term orientation* (sometimes referred to as Confucian dynamism), in contrast to short term orientation, was later added by Hofstede and Bond (1988). Long-term orientation is associated with future oriented attributes, such as thrift, perseverance, accountability, and self-discipline. Conversely, values related to the past and present, such as respect for tradition, carrying out social obligations, personal steadiness, and saving one's face, are associated with short-term orientation (Hofstede et al., 2010, pp. 235-239). According to Hofstede's studies, countries scoring high on long-term orientation also have a higher economic growth than countries that are rather short-term oriented (Hofstede et al., 2010, p. 236). Moreover, Hofstede found that short-term oriented societies are characterized by a rather myopic decision style with a focus on immediate results; sometimes at the expense of long-term results (pp. 244-245). Moreover, long-term oriented societies tend to perceive economic and social inequalities among its members as undesirable (p. 246). Two empirical studies (Kim & Kim, 2010, Vitell et al., 2003) also found support for a positive link between long-term orientation and CSR orientation. Overall, theoretical and empirical research on Hofstede's dimension of long-term orientation has so far been rather scarce. Based on the few theoretical and empirical arguments, the following set of hypotheses is proposed:

Hypothesis 5a: Long-term orientation is positively related to attitudes supportive of environmentally sustainable business practices.

Hypothesis 5b: Long-term orientation is positively related to attitudes supportive of socially sustainable business practices.

Hypothesis 5c: Long-term orientation is positively related to attitudes supportive of economically sustainable business practices.

3.2.2 Defining and Classifying Personal Values

As pointed out at the beginning of Chapter 3.2, a separate, but overlapping, research field has emerged around the theory of personal values. Besides studying the effect of culture on attitudes toward CS, this dissertation is concerned with the analysis of personal values that pertain to the individual and how value priorities inform individuals' perspectives on the importance of CS. Scholars generally agree that each human being holds a fairly stable set of universal values (see e.g. Meglino & Ravlin, 1998, p. 355; Rokeach & Ball-Rokeach, 1989, p. 783; Schwartz, 1992, 1994a). The formation of value priorities is mostly completed when reaching adulthood. After that, it can be assumed that individuals' value priorities are relatively stable and thus are hard to change. As with many concepts that have emerged from different scientific disciplines, there exists no clear and consistent definition of the term *value* (Rohan, 2000, p. 255). Early studies including the works of Allport (1961), Feather (1975), Kluckhohn (1951), Kluckhohn and Strodtbeck (1961), and Rokeach (1973) have resulted in diverse definitions. One of the most frequently cited definitions was provided by Rokeach (1973). He stated that a value is *"an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence"* (p. 5). Similarly, Schwartz (1994a) defined values as *"desirable, transsituational goals, varying in importance, that serve as guiding principles in the life of a person or other social entity"* (p. 21). Complementing the definition, Schwartz suggested a list of six key characteristics that constitute values. In Schwartz's (2006, pp. 3-4) words these features are:

(1) Values are beliefs linked inextricably to affect. […]

(2) Values refer to desirable goals that motivate action. […]

(3) Values transcend specific actions and situations […]. This feature distinguishes values from narrower concepts like norms and attitudes that usually refer to specific actions, objects, or situations.

(4) Values serve as standards or criteria [that] guide the selection or evaluation of actions, policies, people, and events. […]

(5) Values are ordered by importance relative to one another […] [to] form an ordered system of value priorities [...]. This hierarchical feature also distinguishes values from norms and attitudes.

(6) The *relative* importance of multiple values guides action. […] The tradeoff among relevant, competing values is what guides attitudes and behavior (Schwartz, 1992, 1996).

These six key characteristics underline that values can be distinguished from attitudes in so far as values are general and abstract beliefs, characterized by a stable and enduring nature, that provide guidance to and determine attitudinal processes, ideologies and behavior (Rokeach, 1979, p. 9; Schwartz, 1992, p. 1, p. 4).

In management research, studies have investigated and identified personal values as underlying predictors of organizational behavior and managerial decision-making (see e.g. Bigoness & Blakely, 1996; Connor and Becker, 1994, 2003; England, 1967; McDonald and Gandz, 1991; Posner & Munson, 1979).[13] Regarding the CS context, there has been an increasing body of conceptual and empirical literature in recent years (see e.g. Bansal, 2003; Bansal & Roth, 2000; Duarte, 2010; Hemingway, 2005; Hemingway & MacLagan, 2004; Kaldschmidt, 2011; Mudrack, 2007; Swanson, 1995, 1999) on the direct or indirect role of personal values on social aspects in management research. Hemingway and Maclagan (2004), for example, theorized on the role of managers' personal values as crucial factors for the advancement and implementation of CSR policies. According to them, the personal value priorities of managers can influence employees' behavior as they may encourage employees to take CSR seriously and thus foster a favorable CSR orientation in the company (p. 41). In another paper, Hemingway (2005) introduced a conceptual framework that proposes socially oriented personal values as crucial predictors of corporate employees' decision making and subsequent behavior with respect to CSR (p. 244). Bansal and Roth (2000) conceived a model that focused on drivers of corporate ecological responsiveness. According to the model, managers' personal values are linked to ethical motives that in turn affect corporate ecological responsiveness (p. 718). A subsequent qualitative empirical study, conducted by Bansal and Roth (2000), revealed that managers' concern for ecological values increases their motivation to implement environmental responsible business practices (pp. 729-731). In an *inductive longitudinal ethnographic study* conducted in two organizations, Bansal (2003) found that individual concerns and organizational values are the two crucial factors that influence the companies' response to environmental issues. Moreover, the findings indicated that congruence in individual and organizational values helps to advance a company's environmental sustainability (p. 523). Moreover, a recent qualitative study conducted in Brazilian companies supported the proposition that managers' personal values are important drivers for the successful implementation of CSR cultures (Duarte, 2010, p. 355). A model proposed by Swanson (1995, 1999) also pointed out the relevance of personal values on managerial decisions and its effect on corporate social performance.

Concluding, personal values seem to play a direct and indirect role concerning corporate decision-making processes. However, empirical research on the link between personal values and CS attitudes has been scarce. Thus, shedding light on the personal values an individual holds might allow for a prediction of how specific values account for a more favorable attitude to-

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[13] For an overview on research of personal values in organizations see e.g. Meglino and Ravlin (1998).

ward sustainable business practice, or an unfavorable attitude, which can cause reduced commitment toward corporate sustainability. For the subsequent empirical studies, personal values were conceptualized by Schwartz's value typology. The following section will introduce the typology and will derive hypotheses on the link between personal values and CS attitudes.

Research on personal values has generally focused on the identification of a set of individual values that is universal among all cultures (Schwartz 1992, Rokeach, 1973). In order to measure the priorities individuals ascribe to different personal values, Rokeach was one of the first scholars who developed a measurement survey. His Rokeach Value Survey (1973), consisting of a list of 36 terminal and instrumental items (social, moral, personal, and competent values), served as a basis for the later developed Schwartz Value Survey (SVS) (Schwartz, 1992, 1994a). Based on data from his SVS, Schwartz (1992) derived a comprehensive set of value types that aims at conceptualizing individuals' value systems. The set of values comprises ten different value types, namely *universalism*, *benevolence*, *tradition*, *conformity*, *security*, *power*, *achievement*, *hedonism*, *stimulation*, and *self-direction*. These ten value types can be arranged into four higher order dimensions, namely *self-transcendence*, *self-enhancement*, *conservation*, and *openness to change*. Figure 3.4 illustrates a theoretical model on the relationship between the ten motivational types of values and higher order values types. This model was originally proposed by Schwartz in 1992 (p. 45), and has been revised several times since then (see e.g. Schwartz et al., 2001; Schwartz, 2006; Bilsky, Janik, & Schwartz, 2011). The four higher order dimensions are arranged in a bipolar manner. That is, self-transcendence opposes self-enhancement and openness to change opposes conservation. A smaller distance between the ten motivational value types on the circle indicates their motivational bases are more alike (Schwartz et al., 2001, pp. 521-522).

Figure 3.4: Theoretical Model of the Schwartz Value Types
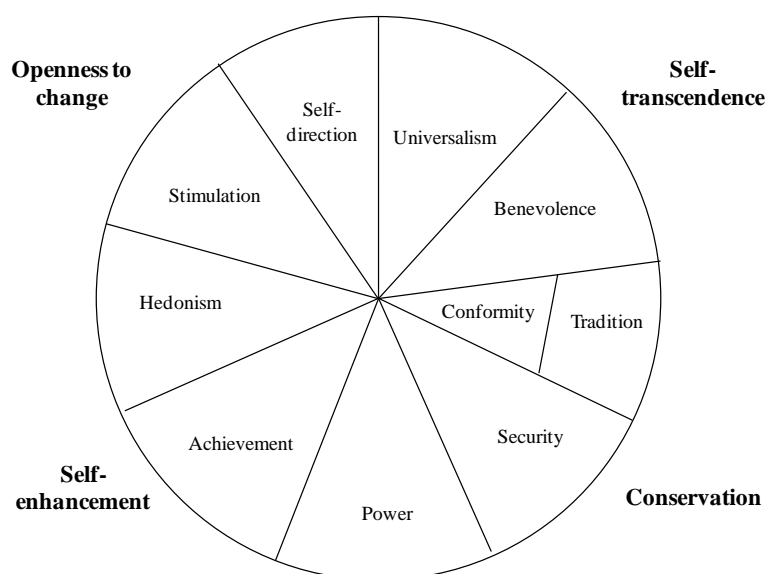
Source: modified from Bilsky et al. (2011), p. 762; Schwartz (1992), p. 45.

The Schwartz Value Survey was applied in large cross-cultural investigations including more than 200 samples from over 60 countries (Schwartz et al., 2001, p. 519). The distinctiveness of the 10 values, which were originally proposed by Schwartz (1992) based on theoretical reasoning, and the universality across cultures were mostly supported, using smallest space analysis. Table 3.1 presents Schwartz's personal value typology, including the four higher-order dimensions, the corresponding value types, a description of the central underlying motivation and corresponding items that are used in the Schwartz Value Survey to measure the respective value types.

Table 3.1: Schwartz's Personal Value Typology

	Value type	Central motivational goal	Example items in the SVS
Self-transcendence	Universalism	Understanding, appreciation, tolerance and protection for the welfare of *all* people and for nature.	equality, a world at peace, unity with nature, social justice, broadminded, protecting the environment
	Benevolence	Preservation and enhancement of the welfare of people with whom one is in frequent personal contact.	loyal, honest, helpful, responsible, forgiving
Conservation	Tradition	Respect, commitment, and acceptance of the customs and ideas that one's culture or religion impose on the individual.	respect for tradition, moderate, humble, accepting my portion in life,
	Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.	Politeness, obedient, self-discipline, honoring parents and elders
	Security	Safety, harmony, and stability of society, of relationships, and of self.	national security, reciprocation of favors, family security, social order
Self-enhancement	Power	Social status and prestige, control or dominance over people and resources.	Wealth, authority, social power, preserving my public image
	Achievement	Personal success through demonstrating competence according to social standards.	ambitious, influential, capable, successful
Openness to change	Hedonism	Pleasure and sensuous gratification for oneself.	pleasure, enjoying life, self-indulgent
	Stimulation	Excitement, novelty, and challenge in life.	a varied life, daring, an exciting life
	Self-direction	Independent thought and action in choosing, creating, exploring.	creativity, independent, choosing own goals, curious

Sources: Schwartz (2009); Schwartz (1994a), p. 22; Bilsky et al. (2011), p. 761.

As shown in Table 3.1, self-transcendence comprises the two value types of universalism and benevolence. According to Schwartz (1992), both benevolence and universalism were derived from the earlier proposed *prosocial* value type (Schwartz & Bilsky, 1987, 1990). Universalism refers to a broad prosocial view including the well-being of society and nature. Conversely, benevolence has a narrower motivational goal which emphasizes the well-being of the in-

group (e.g. family and friends). Schwartz moreover suggested that collectivist societies probably ascribe more importance to benevolence values (in-group), while individualist societies do not distinguish between the importance of both value types (Schwartz, 1992, pp. 11-12). As opposed to self-transcendence, self-enhancement, which is comprised of the two value types of power and achievement, emphasizes more egoistic values (Schwartz, 1992, pp. 8-9). The dimension conservation includes the three value types of conformity, tradition, and security. The position of the value of tradition outside of conformity in Figure 3.4 is due to the fact that both value types have the same underlying motivational goal - deferring of individual needs due to expectations imposed by society (Schwartz, 1994a, p. 24). Finally, the three values types of hedonism, stimulation, and self-direction constitute the openness to change dimension.

Besides the individual level values, Schwartz (1994b, 1999) also proposed a framework at the country level with seven culture level value types as alternative to Hofstede's cultural dimensions. Those cultural values were also measured with the SVS, including the same items as the individual level value types. Moreover, Schwartz stated that a set of four higher order values types emerged that, in terms of content, resembled the individual higher order values. Those are *affective and intellectual autonomy versus conservatism* (in line with openness to change versus conservation at the individual level) and *hierarchy and mastery versus egalitarianism and harmony with nature* (in line with self-enhancement versus self-transcendence at the individual level) (Schwartz, 1994b, pp. 101-106). As emphasized by Schwartz, one should use the individual-level types if the purpose of the research is studying differences of individual beliefs, attitudes, or behaviors (Schwartz, 1994b, p. 117). Moreover, several researchers have pointed out that there is a certain conceptual overlap between Hofstede' culture value framework and the Schwartz's value types. Significant correlations between Hofstede's and Schwartz's framework and distinct similarities between their dimensions have been discovered (see e.g. Hofstede & Hofstede, 2005, p. 32; Ng, Lee, & Soutar, 2006, pp. 170-171; Schwartz, 1994b, pp. 107-110). Consequently, Hofstede and Hofstede (2005) argued that Schwartz's value types are *"a different way of cutting the same pie"* (p. 32).

The subsequent empirical studies in Chapter 5 and 6 conceptualize personal values by means of the four higher order value dimensions self-transcendence, self-enhancement, openness to change, and conservation, as proposed by Schwartz, to investigate whether attitudes concerning the economic, environmental and social dimensions of CS can be predicted by individual value priorities. Similar to the hypotheses stating for the Hofstede dimensions, hypotheses on the link between the Schwartz's value dimensions and the three CS dimensions were formulated only for those relationships that could be based on existing literature or on theoretical and empirical reasoning. So far, very few studies have examined theoretically or empirically the link between Schwartz's values types and attitudes or behavior toward sustainability. In an attempt to link certain Schwartz's value dimensions to Frederick's (1995, 1999) business val-

ues, Kaldschmidt (2011) suggested that conservation and *economizing values*, self-enhancement and *power-aggrandizing values*, as well as self-transcendence and *ecologizing values* are related to each other (p. 92). The latter suggested relationship was, indeed, supported by empirical studies that found evidence for a positive link between self-transcendence values (universalism, benevolence) and favorable attitudes toward social and environmental sustainable business practices (Ng & Burke, 2010; Simmons, Shafer, & Snell, 2009; Shafer, Fukukawa, & Lee, 2007; Fukukawa, Shafer, & Lee, 2007). If values affect attitudes and behavior, people that prioritize self-transcendence values, such social justice, unity with nature and helpfulness, are most certainly motivated to pursue these goals. Based on the theoretical reasoning and empirical evidence, the following hypotheses are proposed:

Hypothesis 6a: Self-transcendence (universalism, benevolence) is positively related to attitudes supportive of environmentally sustainable business practices.

Hypothesis 6b: Self-transcendence (universalism, benevolence) is positively related to attitudes supportive of socially sustainable business practices.

In contrast, studies showed that achievement, as part of the self-enhancement dimension, and tradition, as part of the conservation dimension, were negatively linked to the respondents' opinion on the importance of social and environmental issues (Shafer et al., 2007; Fukukawa, et al., 2007). We, therefore, propose the following hypotheses:

Hypothesis 7a: Self-enhancement (achievement, power) is negatively related to attitudes supportive of environmentally sustainable business practices.

Hypothesis 7b: Self-enhancement (achievement, power) is negatively related to attitudes supportive of socially sustainable business practices.

Hypothesis 8a: Conservation (tradition, conformity, security) is negatively related to attitudes supportive of environmentally sustainable business practices.

Hypothesis 8b: Conservation (tradition, conformity, security) is negatively related to attitudes supportive of socially sustainable business practices.

Summing up, the previous subchapters defined and explained the concepts of attitude, culture, and personal values. Moreover, the conceptual link between these concepts was discussed. If attitudes and behavioral intention toward CS are crucial determinants for an integration of sustainability practices into the core corporate strategy, it is important to understand how individuals perceive the three dimensions of the TBL and which factors determine these attitudes. Although there are other possible variables that may influence attitudes toward CS, the empirical studies in Chapter 5 and Chapter 6 focus on exploring the predictive power of individual cultural orientations and personal values. Figure 3.5 illustrates the proposed research

model that summarized the stated hypotheses and underlies the subsequent empirical studies of this dissertation. The last part of Chapter 3 will present a detailed literature review on quantitative empirical studies that investigated national culture, personal values and other antecedents of CS attitudes.

Figure 3.5: Research Model Specifying Antecedents of CS Attitudes
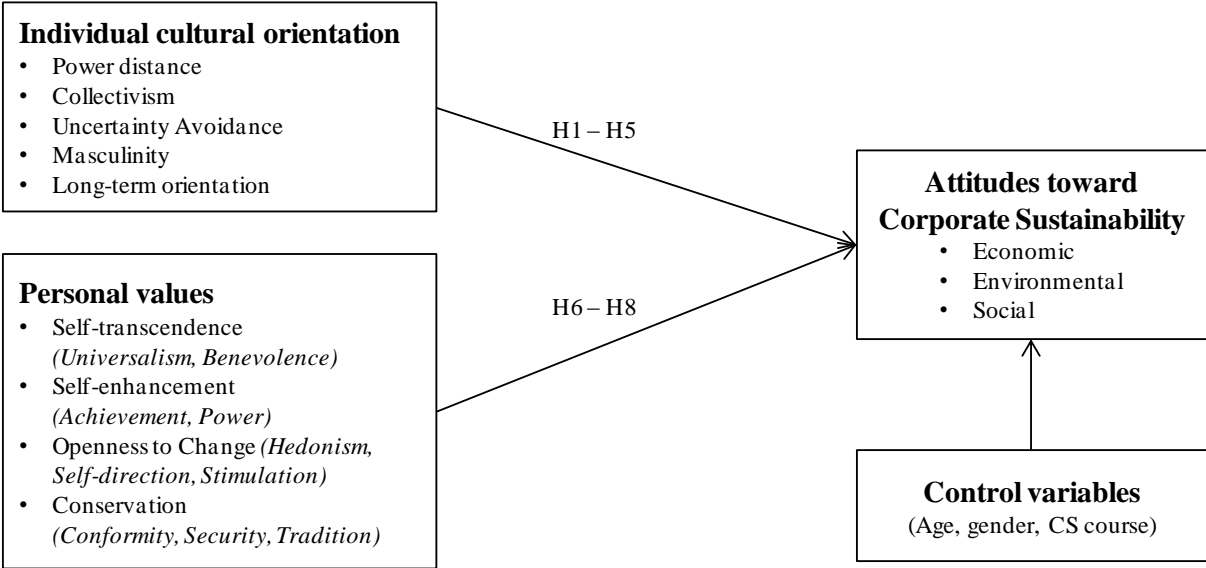
3.3 Review of Empirical Research on Attitudes toward Sustainable Business Conduct

A systematic literature review of existing empirical studies on attitudes[14] toward corporate sustainability and related concepts was conducted prior to the scale development and large scale studies (see Chapter 4 to Chapter 6). The literature research identified 66 published articles in peer-reviewed journals between 1973 and 2011. It shows that most of these studies deal with the attitude toward CSR as conceptualized by Carroll (1979) rather than CS. However, as discussed in Chapter 2, the dissertation treats CSR as a subordinate construct of CS. The literature review serves two main purposes for the dissertation at hand. Firstly, the development of a new measurement scale should only be approached if no suitable instrument that measures the construct of interest already exists. For that reason, the existing empirical studies were analyzed with respect to their methodology, focusing particularly on the applied measurement scale. Secondly, the review intends to provide a systematic overview of examined determinants of CS attitudes. The empirical findings of these previous studies are later compared to the findings of the empirical studies in this dissertation. The followings section provides an explanation of the methodology of the literature search, followed by a descriptive analysis of the identified studies and a discussion of investigated determinants of the attitude toward CS and related concepts.

3.3.1 Methodology of the Literature Review

In line with theoretical considerations in Chapter 3.1, the literature review was limited to empirical studies that conducted research at the individual level, with special focus on student and professional samples. It should be noted that an extensive literature search on consumer or investor attitudes toward CS and related concepts would have opened up a completely new field of literature and was, therefore, not contemplated. Furthermore, emphasis was put on CS related constructs as defined in Chapter 2 and on potential predictors, not on the outcomes of these attitudes. To identify relevant peer-reviewed journal articles, different databases and search engines, including Scopus, Business Source Premier (EBSCO), JSTOR, and Google Scholar, were searched using the following key words: *corporate sustainability*, *corporate social responsibility*, and *corporate responsibility* in combination with *attitude*, *belief*, *importance*, *opinion*, *orientation*, and *perception*. In addition to the key word search, backward and forward literature search (Webster and Watson, 2002) was undertaken. That is, references of the articles found via the key word search (backward) as well as articles that have cited the found articles (forward) were reviewed for their relevance. Furthermore, a backward and forward author search was conducted, meaning that articles published by the authors of the already identified studies were reviewed. All potential articles were screened for relevance by checking the title, abstract, and stated key words. This structured process yielded 66 relevant articles from 18 journals (see Table 3.2). The articles cover a time span from 1973 to 2011,

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[14] In spite of minor conceptual differences, the term *attitude* may be equated or substituted here with the words *belief*, *opinion*, *orientation*, and *perception*.

with the majority of articles being published in the last 10 years. Moreover, only studies that applied a survey approach that yielded quantitative findings were further examined. Six studies based on purely qualitative interviews were therefore excluded. The remaining 59 articles formed the basis of the present literature survey on empirical studies.

Table 3.2: Journals and Number of Articles

Journals	No. of studies
Academy of Management Journal	2
Business & Society	7
Business Ethics Quarterly	1
Business Ethics: A European Review	5
Business Horizons	1
Business Strategy and the Environment	1
California Management Review	2
Corporate Social Responsibility and Environmental Management	1
International Journal of Organizational Analysis	1
International Journal of Value-Based Management	1
Journal of Academy of Marketing Science	1
Journal of Business Ethics	28
Journal of Business Research	1
Management Decision	2
Management International Review	1
Personnel Psychology	1
Psychology and Marketing	1
Teaching Business Ethics	2
Sum	**59**

3.3.2 Descriptive Statistics

In the next step, the 59 studies were analyzed according to the following criteria: studied countries, sample type (student or professional sample), sample size, construct (dependent variable), definition and conceptualization of the construct, measurement of the construct, and independent variables. Table 3.4 in the Appendix of Chapter 3 presents a detailed overview on these criteria for each study.

Countries: The analysis of the 59 studies revealed that the number of countries looked at vary between one country and eight countries. The majority of studies ($n = 42$) gathered data only in one country, seven studies compared data from two countries, five studies analyzed samples from three or four countries, and only three studies conducted research in six, seven or eight countries, respectively. Moreover, two studies mentioned that their empirical study was multinational without further specifying the number of countries. Considering the number of studies carried out in the BRIC countries, Germany, and the USA reveals the following picture: the USA was covered in 41 out of the 59 studies; samples from China were included in six studies; three studies gathered data in Germany; two studies in Russia, one study in India

and no quantitative data was so far collected in Brazil. Overall, the studies mostly focused on developed countries. The present findings of limited developing country and emerging market representation, as well as a general lack of cross-national empirical studies, was underpinned by a recent review of CR studies in international management journals (Egri & Ralston, 2008).

Sample type and size: While six of the studies used a mixed sample, including student and professional (manager, entrepreneurs, practitioners) samples, the majority employed either a professional ($n = 34$) or a student sample ($n = 19$). Among the student samples, business students were the most frequent group studied. Sample sizes for student samples ranged from 100 students (Fukukawa, Shafer & Lee, 2007) to 1068 (Furrer et al., 2010). For the adult samples, the range was from 20 (Graafland, Kaptein & Mazereeuw, 2007) to 1,996 (Furrer et al., 2010).

Constructs: In order to form an overview of the different constructs of interest, the identified studies were grouped according to their underlying theoretical construct. The majority of studies ($n = 40$) examined, in the broadest sense, the *attitudes/perceptions/orientations toward CSR/CR*[15]. Another large group of studies examined the *perceived role of ethics and social responsibility*[16] (PRESOR) in achieving long-term effectiveness and success in firms ($n = 11$). This group of studies was the only one that relied on a common measurement instrument - the PRESOR scale, developed by Singhapakdi, Vitell, Rallapalli, & Kraft (1996). The PRESOR studies were included, despite their partial focus on ethics, because the item screening revealed items that measure the perceived importance of social responsibilities. Other identified articles studied constructs named *attitudes toward environmental management*[17] ($n = 4$), *importance of social responsible business conduct* ($n = 2$), and *commitment to corporate citizenship* ($n = 2$). Concluding, the majority of studies examined attitudes and perceptions toward CSR/CR. The conducted literature search revealed very few studies (e.g. Collins, Steg, & Koning, 2007; Cummings, 2008; Fukukawa et al., 2007; Furrer et al., 2010; Ng and Burke, 2010) that attempted to investigate attitudes toward one or more aspects of corporate sustainability (e.g. attitudes toward environmental management).

Measurement scales: The theoretical construct of interest should guide the selection of an appropriate measurement scale. The majority of the 59 studies made use of two established

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[15] The following notations were used in this group: Perception of CSR/CR ($n = 12$), CSR/SR orientation ($n = 10$), attitudes toward CSR/CR ($n = 8$), social responsibility attitudes ($n = 2$), corporate social responsiveness orientation ($n = 2$), evaluations of social responsibility, social attitudes, CR perspectives, attitudes toward corporate actions, perception of stakeholder relationships and societal responsibilities.

[16] The following wordings were used: Perceived importance/role of ethics and social responsibility ($n = 5$), relative importance of CSR in determining overall organizational effectiveness ($n = 3$), perceived role of social responsibility, perception of ethics and moral judgment, attitudes toward the importance of corporate ethics and social responsibility.

[17] Attitudes toward environmental management ($n = 2$), attitudes toward social and environmental accountability, beliefs of sustainable corporate performance.

measurement instruments. The first one is a forced-choice measurement instrument on CSR orientation (CSRO), developed by Aupperle (1982, 1984) and Aupperle, Carroll and Hatfield (1985). As Ruf, Muralidhar, and Paul (1998) pointed out, the CSRO scale was the first measurement instrument that incorporated the multidimensional nature of CSR (p. 122). The CSRO scale operationalizes Carroll's four-dimensional model of CSR (1979, 1991), including items on the four distinct CSR components of economic, legal, ethical and philanthropic responsibility. The present literature research found 18 studies that either used the original CSRO scale or modified versions that were developed based on the original scale (e.g. Smith & Blackburn, 1988; Maignan & Ferrell, 2000, 2003). While the original CSRO instrument was used by Aupperle et al. (1985) to investigate the link between managers' CSRO and a firms profitability, the presented empirical studies examined, besides manager samples, others, including students, employees, board members, and customers. Due to the four dimensional approach, the CSRO scale does not seem to be appropriate for the research purpose of this dissertation as the dimensions do not perfectly reflect the three dimensions of CS. Another drawback is the use of a forced-choice format (a constant sum scale), which asks respondents to divide a certain amount of points (e.g. 10 points) between the four items, with each item reflecting one of the four dimensions of CSR. Although the constant sum scale attempts to reduce response bias, its ipsative nature forbids certain statistical analyses, such as the comparison of means across individuals.

The second widely applied measurement instrument is the PRESOR scale, devised by Singhapakdi et al. (1996), that measures the perceived importance of ethics and social responsibility (PRESOR). Twelve of the identified studies applied some form of the PRESOR scale or its predecessor scale named the Organizational Effectiveness Menu (Kraft & Jauch, 1992). The three dimensions of the PRESOR scale, which were derived through exploratory factor analysis, were originally labeled *social responsibility and profitability*, *long-term gains*, and *short-term gains* (Singhapakdi et al., 1996, pp. 1134-1135). Although the PRESOR scale is well known, it does not serve the purpose to measure the attitude toward the three-dimensional construct of CS. The PRESOR scale rather emphasizes ethics and social responsibility.

Furthermore, four studies in the literature review made use of the Social Attitudes Questionnaire (SAQ) developed by Aldag & Jackson (1977) or the adapted Social Traditionalism Scale (Mudrack, 2007). The SAQ was developed by Aldag and Jackson (1977) to measure the attitude toward social responsibility. The instrument is rather long including 54 statements. Factor analyses, conducted by Aldag and Jackson (1977) on data from 207 business students and Aldag and Jackson (1984) on data from a subsequent study with 245 executives, revealed a five factor structure, with the dimensions named respectively *traditional orientation*, *negative orientation toward alleged responsibility*, *demander orientation*, *constrainer orientation*, and *negative orientation toward adequacy of corporate social efforts* (Aldag & Jackson,

1984, pp. 145-147). Comparing the SAQ with the CSRO scale, one can say that the SAQ dimension *traditional orientation* is comparable to the *economic dimension* of the CSR orientation scale and the *demander orientation* in the SAQ is in line with ideas of the *philanthropic dimension* of the CSR orientation scale.

Moreover, eight studies employed various other scales, such as a questionnaire developed by the Aspen Institute, the Social and Environmental Accountability (SEA) scale (CDCAC, 2002), and instruments based on Davis (1973), Orpen (1987), and Ostlund (1977). Seventeen studies did not provide clear information on the origin of their scale. The missing indication of the origin and the theoretical foundation of the scale pertained particularly to very old studies conducted in the 1970s/80s and to very recent studies. Although recent studies regularly provided information on the theoretical framework, for example, Pedersen (2011) and Kujala (2010) stated that their measurement scale was based on stakeholder theory; they usually use new ways of measuring their construct of interest and do not rely on established scales. This also holds true for the few studies that were found on attitudes toward one or more dimensions of corporate sustainability. Among those studies, Ng and Burke (2010) attempted to measure the attitude toward environmental sustainable business practices and Collins et al. (2007) examined beliefs on the importance of sustainable business practices. Thereby, Ng and Burke (2010) applied six items, based on a conceptualization of Thomas (2005), which measured students' attitude toward the legitimacy of environmental sustainable business practices and the importance of teaching concepts and strategies with regard to environmental sustainability in business courses (p. 607). The objective of the Ng and Burke study is quite similar to the present dissertation's measurement objective. However, Ng and Burke's study aims at the legitimacy of environmental sustainable business practices. This is, of course, an important precondition to a positive attitude toward sustainability. What is more, the scale neglects social and economic aspects of corporate sustainability. In contrast, Collins et al. (2007) addressed the importance supermarket customers place on corporate sustainability using the triple bottom line approach. This is one of the few customer studies that were included in the literature review owing to its focus on the TBL approach.

As can be seen, there is neither a consensus with respect to the measured construct nor with respect to a common measurement instrument. What is more, one cannot observe a clear pattern or trend concerning the choice of the construct and the measurement instrument. The only theoretical construct that was measured by a unified scale was the perceived role of ethics and social responsibility in organizational effectiveness. Despite the large number of scales that attempt to measure attitudes toward CSR and related concepts, the literature review has not brought forward an appropriate measurement scale that serves the purpose to measure attitudes toward the importance of the three dimensions of sustainable business practices. It goes without saying that all existing measurement instruments have contributed to the devel-

opment of the scale, which will be elaborated on in Chapter 4. However, due to a different scope and focus, it was not feasible to employ any of the instruments one-on-one.[18]

Scale features: Finally, for the subsequent empirical study, not only are the existing measurement instruments, their dimensions and items of interest, but also the type of scaling. Forty-three studies used a Likert-type scale, thirteen a forced-choice instrument, and three studies did not indicate the scaling. From the studies with Likert-type scales, one study indicated that it applied a 10-point scale, six studies used a nine-point scale, ten used a seven-point scale, four used a six-point scale, 16 used a five-point scale, and one study used a four-point scale. Based on the present literature review it can be inferred that the popularity of a seven-point scale has increased in recent years since 2000. The number of items per scale ranged from three to 63 items. Table 3.4 in the Appendix of Chapter 3 provides a detailed overview of all 59 studies, including the studied countries, samples, sample size, construct, and details on the applied measurement instrument.

3.3.3   Empirical Findings

After the descriptive overview of the empirical studies' in the previous subchapter, the following sections will synthesize the relevant empirical findings of the studies. In addition to measuring attitudes toward related or sub concepts of CS, most studies also investigated the relationship to potential antecedents. The studies included in this literature review examined more than 50 different factors that could be potential determinants of the attitude toward sustainable and responsible business conduct. Table 3.3 on the following page presents a summary of the studied determinants divided into the different levels - institutional, organizational, and individual - of determinants. Besides investigating more than 50 different explanatory variables, the studies also differed in respect to their applied constructs and to their methodology.

Results of the literature research revealed the following general findings. While early works up to the mid 1990s have been explicitly or implicitly born upon the theory of social identity, examining mostly the influence of socio-demographic predictors, such as age, gender, and level of education level (see e.g. Arlow, 1991; Ostlund, 1977; Kraft & Singhapakdi, 1991, 1995), later studies attempted to extend the range of potential explanatory variables by investigating how, for example, country-of-origin, personal and cultural values, leadership styles, religiousness, machiavellianism, ethical ideology, ethics education, or - in case of manager samples - organizational characteristics, including industry, age and size of firm, ownership status, and economic performance, are linked to attitudes toward sustainable and responsible business conduct. Due to the heterogeneous approaches, constructs, and determinants applied

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[18] The authors of the original scales were contacted via email if the scales were not included in the respective articles. The items of the existing measurement scales (e.g. CSRO scale, PRESOR scale, SAQ scale) are available from the author upon request.

by the identified studies, the findings of the studies are difficult to compare. The remainder of this subchapter is limited to the determinants that appear to be most relevant to the research approach of this dissertation. Hence, the next sections summarize empirical findings concerning effects of country-of-origin, cultural values, personal values, and selected socio-demographic factors on CS attitude. The studies are ordered in chronological order starting with the most recent study.

Table 3.3: Examined Determinants of Attitudes toward CS

Level of determinants	Constructs
Institutional	country-of-origin, economic wealth, institutional legacy (socialist vs. capitalist), institutional change (stable vs. transitional)
Organizational	industrial sector, strategy (competitive orientation, market orientation), firm location, firm size, number of employees, KPIs (revenues, annual sales, etc.), organizational commitment, corporate ethical values, enforcement of code of ethics, perceived moral climates, team value, employee commitment, customer loyalty, type of director (inside vs. outside), stakeholder role (employee vs. customer)
Individual	gender, age, race, work experience, education level, academic major, ethics course, GPA, international experience, student loan, income, personal values, culture values, religiousness, machiavellianism, ethical ideology (idealism vs. relativism), fatalism, equity sensitivity, leadership styles, work locus of control, protestant work ethic, authoritarianism, self benefits, company benefits, materialism, humanistic orientation, empathic concern, deontological aptitude

3.3.3.1 Country-of-Origin and Corporate Sustainability Attitudes

Of the 59 studies, 17 attempted to examine whether and how attitudes toward sustainable and responsible business conduct differ across countries. Although most studies theoretically considered that the influence of the country of origin could be explained with the difference in cultural values, the studies refrained from collecting data on the respondents' cultural values. The next sections provide a brief summary of each of these studies. To allow for a comparison of results, the studies were clustered in accordance to their underlying construct, starting with eight studies that operationalized CSRO by Carroll's four CSR dimensions of economic, legal, ethical, and philanthropic responsibilities, followed by three studies that investigated the PRESOR as proposed by Singhapakdi et al. (1996). Finally, the findings of six studies that did not make use of these two constructs are discussed.

Corporate Social Responsibility Orientation (CSRO)

Wong, Long and Elankumaran (2010) investigated business students' perception on CSR in the U.S., China, and India by asking them to indicate their level of agreement with different CSR scenarios that a real manager may face in business. The 12 statements were theoretically based on Carroll's four dimensions of CSR, involving situations that tackle economic and noneconomic (ethical, legal, philanthropic) issues. Comparing the mean responses of each

statement, the authors concluded that U.S., Chinese, and Indian business students respond differently when they face the same CSR situation. However, the mean differences were not statistically significant. According to Wong et al. (2010), business students from the U.S. and India accord more importance to noneconomic obligations compared to students from China. The Indian students scored highest on philanthropic aspects, while U.S. students attached more importance to the legal dimension. Moreover, no difference was found as to the importance of environmental issues (measured with one item as part of noneconomic issues). These findings are to some extent surprising, as one would expect, in the light of China's and India's economic race to catch up with developed countries, that respondents from those two countries might neglect social and environmental responsibilities in favor of economic performance. Wong et al. (2010) argued that religious reasons in India and the growing ecological awareness in China and India could have brought forth the stated results (p. 304). Concerning the primary goal of business, respondents of all three countries agreed that taking care of shareholder and consumer interests is most important. However, Indian respondents also emphasized the community needs, including social, cultural, and economic commitment, more than Chinese respondents (pp. 305-306). A concluding statement concerning the ranking of importance of the four Carroll dimensions cannot be made since the study refrained from aggregating the 12 items, which constituted the different CSR scenarios, into the four CSR dimensions.

A study by Ramasamy and Yeung (2009) collected data from banking and insurance employees in Shanghai and Hong Kong to investigate differences in the perceptions of CSR between the two cities. The study revealed that the participants ranked the economic responsibility of companies highest, followed by legal, ethical, and philanthropic responsibility. This is in line with the theoretical suggestions of Carroll (1991). The authors found no difference in any of the four Carroll dimensions across the two cities (p. 127). However, it could be argued that individuals in Shanghai and Hong Kong might hold quite similar cultural values due to their geographical proximity and, at least to some extent, common historical background, resulting in similar perceptions on CSR issues.

Smith, Singal and Lamb (2007) investigated whether CSRO varies across individualist and collectivist societies by sampling business students from the USA and Japan. The USA displays a society that scores high on individualist values, whereas Japan is considered to be a rather collectivist society[19]. Concerning the order of the four Carroll dimensions, both samples ranked the economic dimension highest and the philanthropic responsibilities lowest, which supports Carroll's theoretical model (Carroll, 1991). However, the study came to the conclusion that Japanese and U.S. students differ in their extent on how important they evaluate each dimension of corporate social orientation. U.S. students ranked economic and legal

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[19] According to Hofstede et al. (2010), the USA, ranks on first place in the individualism index being the most individualist society in the Hofstede et al.'s sample, while Japan is ranked in the midfield (pp. 95-96).

obligations significantly higher than Japanese students did, while the latter put on average significantly higher emphasis on the ethical and philanthropic dimensions than their U.S. counterparts (pp. 191-192).

Three studies undertaken by Maignan and Ferrell (2003, 2000) and Maignan (2001) explored managers' and employees' perceptions of CSR in France, Germany, and the USA. While Maignan and Ferrell's study in 2000 served mainly the purpose to develop a measurement scale based on Carroll's four CSR dimensions, the subsequent studies in 2001 and 2003 investigated how much importance German, French, and U.S. respondents allocate to the four dimensions. The studies did not find significant differences between German and French respondents. However, U.S. participants attributed significantly more importance to the economic dimension and less importance to philanthropic dimension than German and French participants. A within-country analysis in the 2003 study found that the U.S. sample ranked the economic responsibilities significantly higher than the ethical and philanthropic ones. No significant differences were found in the mean response of the legal and economic dimension in the U.S. sample. In contrast, the German and French sample ranked the economic responsibilities of firms lower than the other three dimensions. Hence, German and French participants put more emphasis on the noneconomic responsibilities (2003, pp. 61-63; 2001, pp. 63-68). Arising thereby, Maignan and Ferrell's cross-country study did not entirely support the theoretical reasoning of Carroll's suggested ranking of the four CSR components.

In the year 2000, Burton et al. investigated the CSRO of business students in the USA and Hong Kong. A confirmatory factor analysis revealed a four-factor structure for the CSRO construct for both country samples, providing evidence that the respondents viewed the construct CSRO in a similar way. Nevertheless, there were distinct differences between which obligations the respondents ranked as most important. Students from Hong Kong considered the economic dimension more important and noneconomic obligations (legal, ethical, philanthropic) less important than U.S. students (p. 151). Although Burton et al. (2000) collected data on Hofstede's cultural dimension, using the Value Survey Module 1994, no statistical tests were applied to investigate the link between respondents' cultural values and their CSRO. Instead, the authors theoretically inferred from the results that the differences in CSRO might be caused by the differences in the two cultures. For example, Hong Kong respondents scored higher on power distance and uncertainty avoidance in comparison to U.S. respondents, while the latter appeared to be more individualistic and more inclined to endorse a clear distinction of gender roles (pp. 158-159).

The last study in the review that used the four dimensional CSRO construct for cross-culturally investigations is that of Pinkston and Carroll (1996). They examined the CSRO of 131 managers of multinational chemical subsidiaries located in the USA. The countries of origin of the respondents included England, France, Germany, Japan, Sweden, Switzerland,

and the USA. In contrast to the aforementioned studies, the authors came to the conclusion that there was no difference with respect to the ranking of the four dimensions of CSR across countries. The study found evidence for a relatively high emphasis on economic and legal responsibilities. Philanthropic issues were ranked lowest among the respondents (pp. 203-204). However, the authors did not empirically test for statistical differences across the countries and the sample size for each country was rather small.

Perceived Role of Ethics and Social Responsibility (PRESOR)

An empirical study carried out by Shafer, Fukukawa and Lee in the year 2007 compared the influence of nationality on U.S. and Chinese managers' perception of the role of ethics and social responsibility. They found significant differences in the PRESOR mean responses of U.S. and Chinese managers. However, their hypothesis that U.S. managers would emphasize the importance of ethics and social responsibility stronger than their Chinese counterparts was not supported (pp. 274-278). Whilst factor analysis resulted in three factors supporting the original structure found by Singhapakdi et al. (1996), Shafer and colleagues interpreted the dimensions of the PRESOR scale in a slightly different way than Singhapakdi et al. (1996), naming them *stockholder view*, *importance of the stakeholder view*, and *compatibility of the stakeholder view*. While the Chinese managers scored higher on the stockholder view, indicating a renunciation from the stakeholder view, they also attached higher priority than their U.S. counterparts to the other two factors, *importance* and *compatibility of the stakeholder view*, which reflect a stakeholder view. However, the authors did not test for measurement invariance; therefore, the findings should be treated with caution.

Vitell and Paolillo's (2004) cross-cultural study in the U.S., UK, Spain, and Turkey found further support for cross-country differences of perceived importance of ethics and social responsibility measured with the PRESOR scale. According to the study, the country of origin of the sampled marketers significantly influenced the two dimensions of PRESOR, *ethics as long-term, top priority* and *ethics as prima facie duty* - again the authors decided to rename the original dimensions and found only two, not three, dimensions. While the Spanish and Turkish marketers had quite similar perceptions toward ethic and social responsibilities, differences between the U.S., UK and Spain/Turkey became obvious. The UK respondents attributed significantly lower priority to ethics and social responsibility than the other three samples, whereas the U.S. sample assigned significantly higher priority to ethics and social responsibility than the other three samples (p. 193).

In the same vein, Ahmed, Chung and Eichenseher (2003) compared business students' PRESOR across six countries - China, Egypt, Finland, Korea, Russia, and the USA - using an adapted version of the Singhapakdi et al. (1996) PRESOR scale. According to their empirical findings, U.S. respondents strongly linked good business ethics and business profits; whereas

Chinese and Russian participants differed from the other participants in so far as they ascribed rather low importance to ethics and social responsibility in the pursuit of profits. The results for the Chinese participants, indeed, were ambiguous. On the one hand, Chinese participants felt strong personal obligation to act ethical, but on the other hand, they did not assume a contribution of good ethics and social responsibility to profits and long-term success. These findings resemble, to some extent, the insights of Shafer et al.'s (2007) study, who found that Chinese respondents emphasize the importance of shareholders while at the same time attach high importance to stakeholders. Ahmed et al. (2003) attributed the results for Chinese and Russian participants to the circumstance that both countries used to be former centrally planned economies (pp. 98-99).

Other scales

Following the discussion of cross-country studies that used a uniform construct, the next section will briefly present the findings of studies that applied miscellaneous constructs and measurement instruments. Two very recent studies carried out by Pedersen (2011) and Pedersen and Neergaard (2009) examined the CSR and stakeholder perceptions of multinational corporations' managers who exhibit diverse cultural backgrounds. The authors used interviews and questionnaire surveys to collect data. Despite the use of a Likert-type scale, the research approach is of rather qualitative nature. The findings demonstrated a very heterogeneous picture of managerial perceptions of CSR (Pedersen & Neergaard, 2009, p. 1274). Regarding the importance of different stakeholders, Pedersen (2011) concluded that most of the interviewed managers have a traditional perspective focusing only on those stakeholder groups who have a direct link and thus impact on the firm's well-being (p. 187). Although these findings cannot be compared to any of the other studies, there is evidence to suggest that it is still a long way to go until environmental and social sustainability will be part of every manager's mental model.

Furrer et al. (2010) conducted a large scale study on the attitudes of students and managers toward corporate economic, social, and environmental responsibility in four Western European and four Central and Eastern European countries. Although their study is closely associated to what the dissertation attempts to examine, we decided to apply a self-developed scale, instead of using the scale from Furrer et al. (2010). This decision is based on three reasons. First, Furrer et al. (2010) refrained from developing a new measurement instrument that lives up to all three dimensions. Instead, the authors combined existing measurement scales of CSRO (Maignan and Ferrell's 16-item measure, 2003) and environmental management (Branzei & Vertinsky, 2002, Egri & Hornal, 2002). According to Furrer et al. (2010), the social dimension of corporate responsibility is equivalent to Carroll's legal, ethical, and philanthropic dimensions (p. 382). Second, Furrer et al. reported relatively low Cronbach's alphas for the three dimensions (.71 for the environmental dimension, .68 for the economic dimen-

sion, .64 for the social dimension). Moreover, they were not able to establish measurement invariance for the applied scale across the researched countries (p. 387). Their study found out that the attitudes toward economic, environmental and social corporate responsibilities differed significantly between participants from Western European countries and the Central and Eastern European countries. While the environmental responsibility was evaluated as the most important dimension in all eight countries, participants from Western European countries put greater emphasis on social CR than economic CR. These findings strongly contradict with previous studies and with Carroll's CSR pyramid. The participants from the Central and Eastern European countries revealed heterogeneous results (pp. 389-391).

Cummings (2008) conducted a cross-country study on the attitudes toward environmental management of managers and business students in Australia, China, and Indonesia. The respondents had to answer 18 questions concerning their attitude toward environmental management issues. The study found significant differences between Australian, Chinese, and Indonesian participants. Although respondents from all three countries favored most of the environmental issues by scoring above the midpoint on a five-point Likert scale, Australian participants appeared to be least prone to support environmental issues while Chinese exhibited a stronger support for those issues (pp. 24-25). In spite of the interesting insights regarding the cross-cultural examination of attitudes toward corporate environmental commitment, it should be noted here that the study of Cummings (2008) only examined the environmental dimension, lacking the social and economic dimensions of sustainability.

After proposing a two-dimensional model of CSR that reflects on the one hand the *span of corporate responsibility* (wide vs. narrow view on CSR) and *range of outcomes of social commitments of businesses* (benefits vs. costs from CSR actions), Quazi and O'Brien (2000) empirically tested their model on samples collected in Australia and Bangladesh. The conducted cluster analysis revealed that in both countries, despite their different socioeconomic and political background, two distinct clusters of managerial mindsets emerged; including one group of managers that hold a very classical narrow view, i.e. business of business is business; while the other group had a broader view regarding CSR (p. 49).

The earliest study that attempted to compare attitudes between respondents from different countries was conducted by Orpen (1987). The author examined the attitudes of U.S. and South African managers on CSR. The questionnaire asked the managers to indicate their agreement or disagreement with general statements on CSR, statements on the pros and cons of CSR, and statements on their personal attitude toward CSR. Based on a descriptive evaluation of respondents' answers, Orpen concluded that U.S. managers valued CSR higher than managers from South Africa (p. 91).

Summarizing, most of the 17 cross-cultural studies came to the conclusion that attitudes toward sustainable and responsible business conduct differ significantly across countries. Sev-

eral studies found evidence for the proposition that the more developed a country is the more importance is attributed to noneconomic aspects of CS. A possible reason for this difference is the idea that economic development and wealth yield more effective institutional frameworks which in turn foster increasing CSRO (Burton et al., 2000, p. 164; Furrer et al., 2010, p. 382). Furrer et al. (2010) pointed out that a countries' institutional legacy and change have an impact on the individual perspectives on corporate responsibilities (p. 391). Furthermore, varying cultural values were suggested as potential determinants for the prevalent differences (see e.g. Furrer et al., 2010; Ramasamy & Yeung, 2009; Shafer et al., 2007; Smith et al., 2007; Vitell & Paolillo, 2004). Despite the great emphasis of the impact of culture on CS attitudes, the discussed studies refrained from collecting individual data on cultural values. Instead, some of the studies used the country scores on cultural values, as provided on the Hofstede website, to show the differences in the cultural dimensions to motivate their cross-cultural studies and to develop their hypotheses (see e.g. Smith et al., 2007). Furthermore, it should be noted here that the cross-cultural findings should be treated with caution, as almost none of the studies, except for Furrer et al. (2010) and Burton et al. (2000), tested for measurement invariance across the country samples.

3.3.3.2 *Cultural Values and Corporate Sustainability Attitudes*

While the studies above treated all individuals with the same nationality alike, the following studies have taken a step forward in their cross-cultural studies by gathering data on cultural values of each surveyed individual. Sharing the same nationality does not necessarily imply sharing the same cultural values (Taras et al., 2010, pp. 409-410).

A recent mono-cultural study carried out by Kim and Kim (2010) examined the relationship between Korean practitioners' perception of CSR and their cultural values, using Hofstede's typology of cultural dimensions. The authors regressed four different CSR models (*CSR: Good business, CSR: Commitment, CSR: PR Role* and *Total CSR*) on the cultural variables. According to their findings, collectivism, long-term orientation, and high uncertainty avoidance positively affected CSR attitudes, while individualism and high power distance had a negative effect on CSR attitudes (pp. 493-495).

Another study conducted in the same year by Ng and Burke (2010) investigated how certain individual characteristics, including cultural orientations, personal values, and leadership style, are linked to U.S. business students' attitudes toward environmental sustainable business practices. This study confined itself to the environmental dimension of sustainability and was carried out in solely one country. Furthermore, only Hofstede's dimension of individualism versus collectivism was included in the study. The empirical findings provided evidence on a positive relationship between collectivism and a pro-environmental attitude (p. 608-610).

In another mono-cultural study, Vitell et al. (2003) found that cultural values significantly influence U.S. marketing professionals' perceptions of the role of ethics and social responsibility on overall success of a company. The findings showed that individuals with higher scores in power distance tended to perceive the contribution of ethics and social responsibility to firms' success to be rather low, while higher uncertainty avoidance and long-term orientation positively related to the importance of ethics and social responsibility (pp. 75-77).

Finally, Burton et al. (2000) collected data on Hofstede's cultural dimensions. However, they only used the collected data to investigate whether their Hong Kong and U.S. samples varied in their cultural dimensions as proposed by Hofstede. The cultural values were not linked by means of statistical methods to the collected data on CSR orientation. As shown in the present literature review, Burton et al.'s statement according to which very few studies have carried out real cross-cultural comparison of CSR attitudes (p. 154) still holds true. Summarizing the empirical evidence from the few identified studies above, indicates that collectivism, long-term orientation, and high uncertainty avoidance appear to be positively associated with a favorable CSR orientation, while individualism and power distance were found to be negatively related. None of the studies found a link between masculinity/femininity and CSR attitudes. The empirical findings were also supported by a study of Waldman et al. (2006) who analyzed cultural predictors of top management's CSR values. Despite their interesting findings, the Waldman et al. study was not officially included in this literature review since the authors analyzed the data at the firm level and thus aggregated individual responses. Nevertheless, their findings are in line with the other studies mentioned here. Institutional collectivism was found to positively affect CSR values, while power distance negatively related to CSR values (pp. 832-833).

3.3.3.3 Personal Values and Corporate Sustainability Attitudes

Over the course of this literature research very few studies have been identified that studied the effect of personal values on some sort of CS attitudes. Concerning the few identified studies, the application of different value constructs and measurement scales poses an obstacle to the comparison of findings. Nevertheless, the studies provide interesting insights regarding the link of personal values and attitudes toward sustainable and responsible business conduct.

A very recent study carried out by Ng and Burke (2010) explored the nexus between personal values and the attitude toward environmental sustainability. The measurement of personal values was based on Rokeach's value typology (Rokeach, 1973). Ng and Burke found evidence for a positive influence of social values (represented by items such as *"world of beauty"*, *"world at peace"*) on favorable attitudes toward environmental sustainable business prac-

tices. Albeit, moral values, competence values, and personal values[20] were not identified as predictors of pro-environmental attitude.

Four other research studies made use of the Schwartz value taxonomy and, therefore, measured personal values by means of the Schwartz Value Survey (Schwartz, 1992). Simmons et al. (2009) examined the impact of the two values universalism and power on respondents' perceived importance of corporate ethics and social responsibility to organizational success. In their study, universalism was found to have a positive effect on the relevance of corporate ethics and social responsibility, while power had no significant effect (pp. 18-19). The study did not include information on findings regarding the other eight Schwartz's value types.

Shafer et al. (2007) examined the influence of country-of-origin and personal values (Schwartz, 1992) on the perceived importance of ethics and social responsibility of U.S. and Chinese MBA students. The results - after controlling for national differences - provided evidence for a positive relationship of self-transcendence values (universalism, benevolence) and conformity values with respondents' perceived importance of ethics and social responsibility. In contrast, the value type tradition was found to be negatively related to respondents' perceived importance of ethics and social responsibility (p. 278). The last finding is particularly interesting and, to some extent, contradictory to Schwartz' theoretical model that states the two value types of tradition and conformity are closely and positively related to each other.

In another journal article published by Fukukawa et al. (2007), the authors used a sample of MBA students from the USA to investigate how personal values and attitudes on social and environmental accountability are related. The study found universalism to have a significant positive effect on respondents' attitudes toward social and environmental accountability, while the value types of achievement and tradition were found to have a marginally significant negative effect on the importance of social and environmental accountability (pp. 388-389).

Lastly, a research study carried out by Collins et al. (2007) examined the relationship between personal values and sustainable orientation of Dutch supermarket customers. While personal values were measured using the SVS (Schwartz, 1992), participants' belief about the importance of the supermarket's economic, social and environmental actions were assessed using 28 items that reflected economic, social, and environmental aspects. The three-dimensionality of the questionnaire was based on the TBL model (p. 563). Respondents had to indicate to what degree they consider the three dimensions are relevant for the sustainable corporate performance of a supermarket. The study found that participants on average ranked the importance of the environmental and social dimension of sustainable corporate performance higher than the economic dimension (p. 565). Beliefs about the importance of social

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[20] Rokeach classified values into the four dimensions social, moral, competent, and personal values.

and economic performance were moderately correlated with personal values, while the environmental dimension only showed small relationships with two of the ten value types (positive correlation with universalism and negative correlation with power). In addition, the beliefs about the three sustainable corporate performances were regressed separately onto the ten Schwartz values. Multiple regression analysis provided evidence for a positive relationship between universalism and beliefs about the importance of environmental performance (pp. 566-567).

Although no general statement can be made pertaining to the link between personal values and CS attitudes, the studies have potential implications for the empirical studies in Chapter 5 and 6. Overall, the identified empirical studies provided preliminary evidence that especially self-transcendence values (universalism and benevolence) are positively associated with attitudes toward social and environmental issues, while self-enhancement (achievement, power) and, to some extent, conservation (tradition, conformity) are negatively linked to favorable attitudes toward responsible and sustainable business conduct. The Schwartz dimension openness to change (self-direction, stimulation, hedonism) was not found to relate to any sort of CS attitude.

3.3.3.4   *Socio-Demographic Variables and Corporate Sustainability Attitudes*

Several of the identified studies have investigated the effect of socio-demographic factors on CS attitudes. Concluding, the chapter will take a brief look at the following socio-demographic variables: age, gender, attendance of CSR or ethics course, academic major, work experience, and educational background.

Age: In the literature review, fifteen studies included age as a control variable finding mostly no significant effect on the attitude toward CS (Ng & Burke, 2010; Simmons et al., 2009; Zu & Song, 2009; Fukukawa et al., 2007; Quazi, 2003; Morris, 1996). While some studies reported ambiguous results among their different samples (e.g. Ramasamy & Yeung, 2009; Elias, 2004; Maignan & Ferrell, 2003), very few studies found clear evidence for a positive link between a higher age and a favorable attitude toward certain dimensions of CS (Cummings, 2008; Mudrack, 2007; Gavin & Maynard, 1975) or a negative link between a higher age and a favorable attitude toward CS (Arlow, 1991; Aldag & Jackson, 1984).

Gender: Almost half of the identified studies (n=21) investigated the link between gender and favorable CS attitudes. Particularly, very recent studies have not found a significant effect of gender on CS attitudes (Kolodinsky, Madden, Zisk, & Henkel, 2010; Ng & Burke, 2010; Mudrack, 2007; Shafer et al., 2007; Burton et al., 2000). Albeit, if studies found evidence for an effect of gender, that usually implied that females, compared to males, attributed more importance to noneconomic responsibilities, including ethical, discretionary, or environmental aspects, (Simmons et al., 2009; Elias, 2004; Smith, Wokutch, Harrington, & Dennis, 2001;

Burton & Hegarty, 1999; McDonald & Scott, 1997; Kraft & Singhapakdi, 1991; Arlow, 1991) and less importance to economic responsibilities (Burton & Hegarty, 1999; McDonald & Scott, 1997).

CSR and ethics courses: Only two identified studies analyzed whether students' attendance of ethics courses had an impact on their perception of the role of ethical and social responsibility on firm success. Both studies used a pre- and post course design for the collection of data, finding mixed results (Simmons et al., 2009; Elias, 2004). According to Simmons et al. (2009), students surveyed after the ethics course supported the traditional shareholder view less. However, regarding the stakeholder view, in general, no difference was found between pre- and post course attitudes - with two exceptions. Surveyed students majoring in non-business subjects and female students assigned a significantly higher importance to the stakeholder view after the business ethics course as compared to their results before attending the course (pp. 14-15). Thus, it can be inferred from the empirical findings that ethics courses have a greater influence on females and non-business students. Elias (2004), who surveyed U.S. business students before and after high-profile corporate bankruptcies (Enron and WorldCom), found that students with ethics education showed a higher concern about CSR after the bankruptcies (p. 275). Given the fact that most universities have started to introduce ethics and CSR courses as a response to recent corporate scandals, it can be concluded that the effectiveness of these courses is a highly under-researched area.

Academic major: The analysis on the link between academic major and CS attitudes resulted in the following findings. One study did not find a significant difference between majors (Kraft & Singhapakdi, 1995) and two studies found that business students are less supportive of CSR than non-business students (McDonald & Scott, 1997; Arlow, 1991).

Work experience: Twelve studies reported results on the relationship between work experience and a more favorable attitude toward CS. While four studies did not find a significant effect (Fukukawa et al., 2007; Shafer et al., 2007; Kraft & Singhapakdi, 1995; Arlow, 1991), others reported mixed results with respect to the different dimensions and samples (Furrer et al., 2010; Elias, 2004; Morris, 1996; Kraft & Singhapakdi, 1991), three studies reported that the results provided evidence that more work experience comes along with less concern for noneconomic responsibilities (Ibrahim, Howard, & Angelidis, 2008; Ibrahim et al., 2006; Quazi, 2003), and two studies reported that work experience had a positive impact on certain CSR components (Morris, 1996; Aldag & Jackson, 1984).

Educational level: Seven studies examined the effect of the educational level of managers and the year of university study of students. The results were mixed. While three studies did not find a significant effect of the educational level on CS attitudes (Furrer et al., 2010, Ng & Burke, 2010; Zu & Song, 2009), others reported mixed results for their different samples (Ramsamy & Yeung, 2009; Simmons et al., 2009; Maignan & Ferrell, 2003), and two studies

found that individuals with higher educational levels allocated more importance to certain components of CSR (Quazi, 2003; Kraft & Singhapakdi, 1995).

Concluding, findings on the predictive power of socio-demographic factors on CSR attitudes are rather mixed. The majority of studies found no support for a link between personal demographics and CSR attitudes. Further socio-demographic variables that have been object to investigation include the degree of religiousness (Ibrahim et al., 2008; Graafland et al., 2007, 2006; Angelidis & Ibrahim, 2004; Quazi, 2003), race (Kolodinsky et al., 2010, Smith et al., 2001; McDonald & Scott, 1997; Kraft & Singhapakdi, 1995), GPA of students (Ng & Burke, 2010), income (Ramasamy & Yeung, 2009), and international experience (Smith et al., 2007; Quazi, 2003). The chapter will not dwell on the findings regarding the mentioned variables above given that they are not relevant for the subsequent empirical studies in Chapter 5 and Chapter 6. In addition, it should be noted that the carried out literature review was aimed at studies that investigated individual mindsets on CS and related concepts. Studies geared toward the awareness or knowledge of social and environmental issues were not considered.

This chapter provided theoretical foundations of the concepts attitude, culture, and personal values. Moreover, hypotheses on the relationship between CS attitudes, individual cultural orientations, and personal values were derived based on the existing theoretical and empirical literature. The last part of Chapter 3 presented a systematic literature review of previous empirical studies on attitudes toward sustainable and responsible business conduct. The literature review revealed the lack of a suitable measurement instrument that can be applied for the present dissertation.

Appendix to Chapter 3

Table 3.4: Overview of Empirical Studies on Attitudes toward CS

Authors	Country	Sample	Sample Size	Construct	Origin of Measurement Scale	Scale Type	Point	Items
Pedersen (2011)	multinational	Managers	598	Perception of stakeholder relationships and societal responsibilities	Own scale	Likert-type	5-point	3
Furrer et al. (2010)	Croatia Czech Rep. Lithuania Russia France Italy Spain Switzerland	Managers Business students	3064	Attitudes toward corporate responsibilities (social, economic, environmental)	Own scale based on Maignan & Ferrell (2003); Branzei &Vertinsky (2002); Egri & Hornal (2002)	Likert-type	9-point	25
Kim & Kim (2010)	Korea	Employees	150	Perceptions of corporate social responsibility	Social Traditionalism measure revised from Mudrack (2007); Social responsibility measure adapted from Ryan (1986)	Likert-type	7-point	24
Kolodinsky et al. (2010)	USA	Business students	298	Attitudes toward corporate social responsibility	Short version of Singhapakdi et al. PRESOR scale (1996)	Likert-type	4-point	6
Kujala (2010)	Finland	Managers	357 (1994) 325 (1999) 198 (2004)	Corporate responsibility perceptions (stakeholder approach)	Own scale	Likert-type	5-point	63
Ng & Burke (2010)	USA	Students	248	Attitudes toward sustainable business practices (environmental)	Own scale based on Thomas (2005)	Likert-type	7-point	6
Sheth & Babiak (2010)	USA	Managers	27	Perceptions of corporate social responsibility (economic, legal, ethical, philanthropic)	Own scale based on Carroll's model (1979)	Open-ended, ranked order, Likert-type	4-point	47
Wong et al. (2010)	USA China India	MBA students	317	Perceptions of corporate social responsibility (economic, legal, ethical, philanthropic)	Own scale	Likert-type	5-point	12
Burton & Goldsby (2009)	USA	Small-business owners	401	Corporate social responsibility orientation	Aupperle's (1982) CSRO scale	Forced choice		15

Authors	Country	Sample	Sample Size	Construct	Origin of Measurement Scale	Scale Type	Point	Items
Pedersen & Neergaard (2009)	multinational	Managers	159	Perceptions of corporate social responsibility	Own scale	Likert-type	5-point	n/a
Ramasamy & Yeung (2009)	China Hong Kong	Employees consumers	257	Perceptions of corporate social responsibility (economic, legal, ethical, philanthropic)	Own scale based on Maignan (2001)	Likert-type	7-point	22
Simmons et al. (2009)	Hong Kong	Students	132	Attitudes toward the importance of corporate ethics and social responsibility	Singhapakdi et al.'s (1996) PRESOR scale	Likert-type	7-point	13
Turker (2009)	Turkey	Professionals	269	Corporate social responsibility	Own scale based on Aupperle (1984); Carroll (1979); Maignan & Ferrell (2000); Quazi & O'Brien (2000); Wood & Jones (1995)	Likert-type	7-point	18
Zu & Song (2009)	China	Managers	83	Attitudes toward corporate social responsibility	Own scale	Likert-type	5-point	11
Cummings (2008)	Australia China Indonesia	Managers	678	Attitudes toward environmental management	Own scale	Likert-type	5-point	18
Ibrahim et al. (2008)	USA	Managers Students	917	Corporate social responsibility orientation (economic, legal, ethical, philanthropic)	Aupperle et al.'s (1985) CSRO scale	Forced choice		20
Lämsä et al. (2008)	Finland	Students	217	Attitudes on corporate responsibility in society	Aspen Institute (2001)	Partially Likert-type	5-point	n/a
Collins et al. (2007)	Netherlands	Customers	198	Beliefs of sustainable corporate performance (economic, social, environmental)	Own scale	Likert-type	10-point	28
Fukukawa et al. (2007)	USA	MBA students	100	Attitudes toward social and environmental accountability	SEA scale (CDCAC, 2002)	Likert-type	9-point	n/a
Graafland et al. (2007)	Netherlands	Managers	20	Socially responsible business conduct	Own scale	Likert-type	5-point	25

Authors	Country	Sample	Sample Size	Construct	Origin of Measurement Scale	Scale Type	Point	Items
Mudrack (2007)	USA	Employees	491	Social responsibility attitudes	Social Traditionalism Scale based on Aldag & Jackson's (1977, 1984) Social Attitudes Questionnaire	Likert-type	7-point	18
Shafer et al. (2007)	USA China	MBA students	311	Perceived importance of ethics and social responsibility	Singhapakdi et al.'s (1995, 1996) PRESOR scale	Likert-type	9-point	13
Smith et al. (2007)	USA Japan	Students	806	Corporate social orientation (economic, legal, ethical, philanthropic)	Aupperle's (1984) CSRO scale	Forced choice		15
Graafland et al. (2006)	Netherlands	Entrepreneurs	50	Socially responsible business conduct	Own scale	Likert-type	5-point	19
Ibrahim et al. (2006)	USA	Employees Students	646	Corporate social responsiveness orientation (economic, legal, ethical, philanthropic)	Aupperle et al.'s (1985) CSRO scale	Forced choice		20
Worthington et al. (2006)	UK	Entrepreneurs	32	Orientation towards social responsibility (economic, legal, ethical, philanthropic)	Own scale	Likert-type	5-point	n/a
Angelidis & Ibrahim (2004)	USA	Business students	473	Corporate social responsibility orientation	Aupperle et al.'s (1985) CSRO scale	Forced choice		20
Elias (2004)	USA	Students	1st: 466 2nd: 324	Perceived role of social responsibility	Singhapakdi et al.'s (1996) PRESOR scale	Likert-type	9-point	13
Smith et al. (2004)	USA	Students	343	Corporate social orientation	Smith & Blackburn's (1988) short version of Aupperle et al.'s (1985) CSRO scale	Forced choice		10
Vitell & Paolillo (2004)	USA UK Spain Turkey	Managers	626	Perceived importance of ethics and social responsibility	Singhapakdi et al.'s (1995, 1996) PRESOR scale	Likert-type	7-point	n/a

Authors	Country	Sample	Sample Size	Construct	Origin of Measurement Scale	Scale Type	Point	Items
Ahmed et al. (2003)	China, Egypt Finland Korea Russia USA	Business students	1154	Perception of ethics and moral judgment	Own scale based on Singhapakdi et al. (1996)	Likert-type	9-point	44
Maignan & Ferrell (2003)	France Germany USA	Customers	408	Corporate responsibilities perspectives (economic, legal, ethical, philanthropic, stakeholder responsibility)	Own scale based on Aupperle et al. (1985); Clarkson (1995); Maignan & Ferrell (2000)	Likert-type	7-point	36
Quazi (2003)	Australia	Managers	102	Perceptions of corporate social responsibility	Own scale	Likert-type	5-point	25
Vitell et al. (2003)	USA	Professionals	235	Perception of the importance of ethics and social responsibility in relation to the long-term effectiveness and success of the firm	Singhapakdi et al.'s (1995, 1996) PRESOR scale	Likert-type	7-point	12
Maignan (2001)	France Germany USA	Customers	408	Perception of corporate social responsibility	Own scale based Aupperle et al. (1985); Maignan & Ferrell (2000)	Likert-type	7-point	21
Smith et al. (2001)	USA	Students	273	Corporate social orientation (economic, legal, ethical, philanthropic)	Smith & Blackburn's (1988) short version of Aupperle et al.'s (1985) CSRO scale	Forced choice		10
Burton et al. (2000)	USA Hong Kong	Business students	322	Corporate social responsibility orientation (economic, legal, ethical, philanthropic)	Aupperle et al.'s (1985) CSRO scale	Forced choice		12
Maignan & Ferrell (2000)	USA France	Managers	330	Corporate citizenship (economic, legal, ethical, philanthropic)	Own scale based on Carroll's model (1979)			29
Quazi & O'Brien (2000)	Australia Bangladesh	Managers	320	Perception of span of corporate responsibility	Own scale based on Davis (1973); Ostlund (1977); Orpen (1987)	Likert-type	5-point	25

Authors	Country	Sample	Sample Size	Construct	Origin of Measurement Scale	Scale Type	Point	Items
Burton & Hegarty (1999)	USA	Students	219	Corporate social responsibility orientation (economic, noneconomic, legal, ethical, philanthropic)	Revised Aupperle (1984) CSRO scale	Forced choice		15
Maignan, Ferrell, & Hult (1999)	USA	MBA students	364	Corporate citizenship (economic, legal, ethical, philanthropic)	Own scale	Likert-type	5-point	29
McDonald & Scott (1997)	USA	Students	242	Attitudes toward corporate actions (economic, legal, ethical, philanthropic)	Smith & Blackburn's (1988) short version of Aupperle et al.'s (1985) CSRO scale	Forced choice		10
Morris (1996)	USA	Managers	112	Attitudes toward corporate responsibilities	Smith & Blackburn's (1988) short version of Aupperle et al.'s (1985) CSRO scale	Forced choice		10
Pinkston & Carroll (1996)	England France Germany Japan Sweden Switzerland USA	Managers	131	Corporate social responsibility/ corporate citizenship orientation	Aupperle's (1982) CSRO scale	Forced choice		15
Singhapakdi et al. (1996)	USA	Business students	153	Perceived role of ethics and social responsibility	Own scale (PRESOR scale) based on the work of Kraft & Jauch (1992)	Likert-type	9-point	16
Ibrahim & Angelidis (1995)	USA	Inside and outside directors	429	Corporate social responsiveness orientation (economic, legal, ethical, philanthropic)	Aupperle et al.'s (1985) CSRO scale	Forced choice		20
Kraft & Singhapakdi (1995)	USA	Undergraduates MBA students	182	Relative importance of corporate social responsibility on overall organizational effectiveness	Kraft & Jauch's (1992) revised Organizational Effectiveness Menu	Likert-type	6-point	35
Arlow (1991)	USA	Students	138	Evaluations of social responsibility	Aldag & Jackson's (1977) Social Attitudes Questionnaire	Likert-type	5-point	51

Authors	Country	Sample	Sample Size	Construct	Origin of Measurement Scale	Scale Type	Point	Items
Kraft (1991a)	USA	Students	151	Relative importance of corporate social responsibility on organizational effectiveness	Kraft & Jauch's (1988) Organizational Effectiveness Menu	Likert-type	6-point	60
Kraft (1991b)	USA	Managers	53	Relative importance of corporate social responsibility on overall organizational effectiveness	Kraft & Jauch's (1988) Organizational Effectiveness Menu	Likert-type	6-point	60
Kraft & Singhapakdi (1991)	USA	Managers Students	204	Role of ethics and social responsibility in achieving organizational effectiveness	Kraft & Jauch's (1988) Organizational Effectiveness Menu	Likert-type	6-point	60
Orpen (1987)	USA South Africa	Managers	315	Social responsibility attitudes	Own scale derived from Over & Barone (1976); Ostlund (1977)	Likert-type	n/a	5
Aldag & Jackson (1984)	USA	Managers	245	Social attitudes	Aldag& Jackson's (1977) Social Attitudes Questionnaire	n/a	n/a	54
Ford & McLaughlin (1984)	USA	Managers Business deans	319	Perceptions about corporate social responsibility	Own scale based on statements from Davis (1973)	Likert-type	5-point	22
Gill & Leinbach (1983)	Hong Kong	Managers	83	Attitudes toward corporate social responsibility	Own scale	Likert-type	5-point	n/a
Ostlund (1977)	USA	Managers	1015	Attitudes toward corporate social responsibility	Own scale	Likert-type	n/a	n/a
Holmes (1976)	USA	Managers	192	Attitudes toward corporate social responsibility	Own scale	Likert-type	n/a	5
Gavin & Maynard (1975)	USA	Management and nonmanagement employees	660	Perceptions of corporate social responsibility	Own scale	Likert-type	5-point	15
Krishnan (1973)	USA	Managers	209	Perception of corporate responsibility	Own scale	n/a	n/a	4

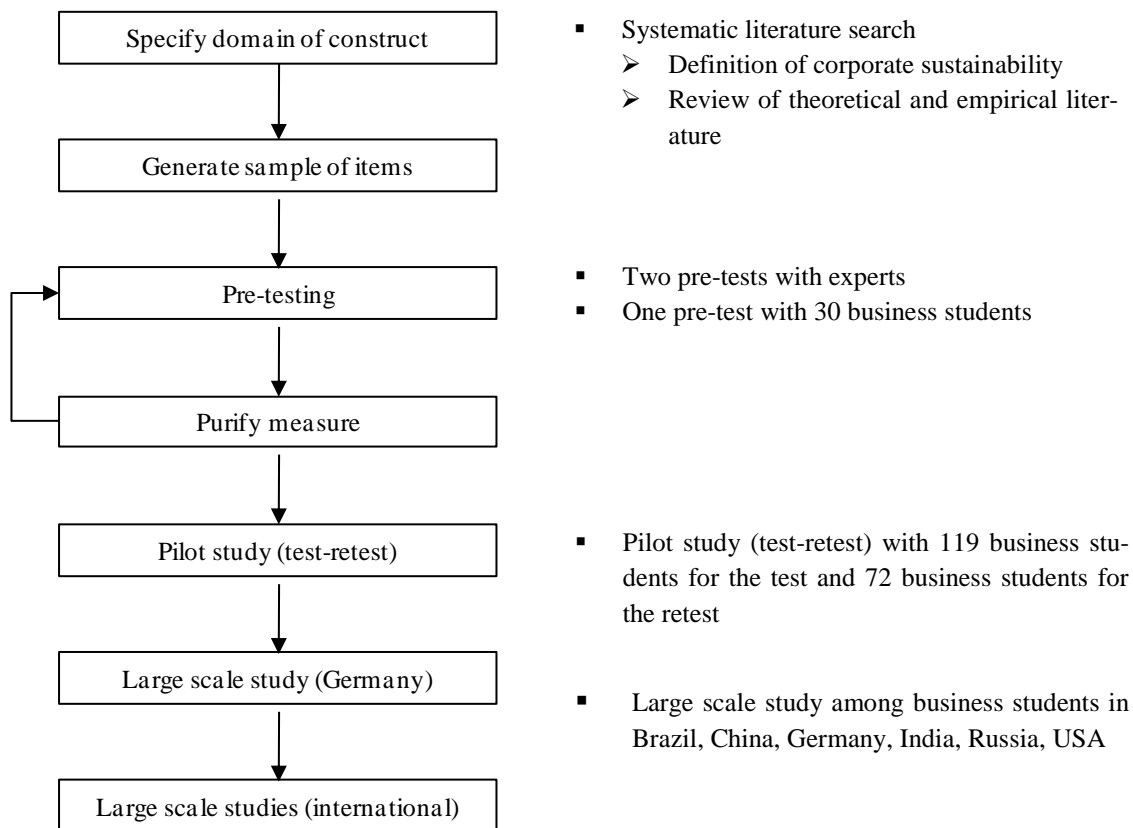# 4 Development of the Corporate Sustainability Attitude Scale

The ultimate objective of the present dissertation is to measure individual attitudes toward corporate sustainability, or put more precisely, the relevance individuals attach to corporate sustainable business practices, including economic, environmental and social corporate activities, on the long-term success of an organization. The systematic literature search on existing scales in Chapter 3 revealed the lack of a suitable measure that could be used to assess the attitude toward corporate sustainability as defined in Chapter 2. For this purpose, it was attempted to operationalize the *attitude toward corporate sustainability* (CSA) through a newly developed scale consisting of three subscales that adequately represent the construct under examination.

As scholars have noted, it is necessary for a newly developed or substantially modified scale to undergo an extensive test on its psychometric properties, including validity and reliability, before it can be put into practice (see e.g. Hinkin, 1998, p. 104; Schriesheim, Powers, Scandura, Gardiner, & Lankau, 1993, p. 389). Unfortunately, many elaborated studies that use newly developed scales suffer from inaccurate domain sampling, which can result in poor content validity - the basic requirement for sound psychometric properties of a scale. Furthermore, reporting of the development process is often times insufficient (Hinkin, 1998, p. 104). However, neglecting these important steps in the scale development process may hamper subsequent analyses of the construct under investigation. The development process of the CSA scale, therefore, takes up much space in the present dissertation, as it is the foundation for the subsequent empirical analysis of the attitude toward corporate sustainability in Chapter 5 and Chapter 6.

Following a scale development process for multi-item measures that most closely corresponds to suggestions of Churchill (1979) and Hinkin (1998), the development was carried out as illustrated in Figure 4.1, including several feedback loops during the pre-testing to ensure the development of a scale with sound psychometric properties. The development process was based on measurement scale guidelines frequently applied in management studies (Churchill, 1979; DeVellis, 2003; Hinkin, 1998; Spector, 1992). In addition to these guidelines, journal articles that developed scales for related or sub concepts of CS, such as CSRO, CR perspectives, etc. (Furrer et al., 2010; Maignan & Ferrell, 2000; Maignan et al., 1999; Quazi & O`Brien, 2000; Singhapakdi et al., 1996) were consulted. Following well-established procedures enhances the likelihood to develop a scale that exhibits sound psychometric properties, including validity, internal consistency reliability, as well as cross-cultural applicability. As shown in Figure 4.1, the creation of an initial item pool was preceded by a structured literature search and a clear specification of the investigated construct. Thereby, the literature search of the sustainability literature included the search for CS definitions (see Chapter 2)

and existing measurement scales on CS[21] attitudes (see Chapter 3) to ensure content validity (Churchill, 1979, pp. 67-68; Spector, 1992, p. 8; Hinkin, 1998, p. 105). Additionally, two conducted pre-tests, which provided valuable input from experts on the accuracy and completeness of the scale, followed by a pre-test with 30 business students to identify any problems with ambiguous wording of items or instructions, helped to enhance the content validity of the newly developed scale. The development process was complemented with a pilot study in Germany that involved a test-retest and finally large scale studies in Germany and five other countries to evaluate the psychometric properties of the developed scale.

Figure 4.1: Scale Development Process

Specify domain of construct

- Systematic literature search
  - Definition of corporate sustainability
  - Review of theoretical and empirical literature

Generate sample of items

Pre-testing

- Two pre-tests with experts
- One pre-test with 30 business students

Purify measure

Pilot study (test-retest)

- Pilot study (test-retest) with 119 business students for the test and 72 business students for the retest

Large scale study (Germany)

- Large scale study among business students in Brazil, China, Germany, India, Russia, USA

Large scale studies (international)

Source: modified from Churchill (1979), p. 66; Hinkin (1998), p. 106.

In detail, the remainder of the chapter contributes toward the objective of the dissertation as it addresses the different steps of the scale development process: First, it specifies the construct that was adopted for the scale development process. Thereafter, the item generation and scale design for the new CSA scale are described and explained in detail, followed by information on the pre-testing with experts and student samples. The last subchapter deals with the pilot study in Germany, including a test and retest, which was used to further validate the developed measurement scale in accordance with established psychometric guidelines.

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[21] Note that this encompasses also sub concepts, including CSR, CR, CC, etc.

4.1 Construct Definition

One cannot develop a scale to measure a construct without properly defining and delineating it from related concepts (Churchill, 1979, p. 67; Clark & Watson, 1995, p. 312; Spector, 1992, pp. 12-18). Therefore, the first step in the process of developing a new measurement scale is to define the target construct and devise a precise conception of it and its theoretical context. The conducted literature research in Chapter 2 revealed that a great variety of different definitions exist, yet no generally accepted definition and conception of corporate sustainability has emerged. The multifaceted concept of CS is still somewhat controversial and open-textured and often used interchangeably with related or sub concepts. Within the present dissertation, CS is conceptualized with the TBL approach - comprising an economic, environmental, and social dimension. The following definition that integrates these different spheres of CS was adopted (see Chapter 2):

> *Corporate sustainability is a corporation's contribution to overall sustainable development. It warrants the balancing of a broad multiplicity of present and future stakeholder interests in the economic, environmental, and social dimension and thus guarantees the long-term success of the corporation.*

Individuals' attitudes toward corporate sustainability cannot be directly observed. However, latent variables, such as the attitude toward CS, can be assessed through verbal statements. In addition, attitudes toward CS may have different nuances ranging from a very unfavorable to a very favorable attitude. Given these features, the measurement of the threefold nature of the attitude toward CS is best conducted through a multiple-item and multidimensional scale that covers the economic, environmental and social dimension. Since theory with respect to CS already exists, a deductive approach was employed. That is, the definition of the construct and its three dimensions based on the TBL approach set the course for the subsequent scale development. By using this approach, the likelihood of content validity of the measurement scale is advanced (Hinkin, 1998, p. 107). Another advantage of the deductive approach compared to an inductive approach in scale development pertains to the increased likelihood in establishing measurement invariance across different cultural contexts. Scales that are developed deductively tend to have items that exhibit less cultural specificity (Riordan & Vandenberg, 1994, p. 667; Hu, Pelligrini, & Scandura, 2011, p. 7). The next subsection will describe the item generation for the three dimensional CSA scale.

4.2 Item Generation and Scale Design

After specifying and defining the construct under examination, a literature search on existing scales on the attitude toward CS, as well as related or sub concepts, was conducted in Chapter 3 to identify potential items for the initial item pool that would fit the construct. Employing a keyword search, a comprehensive amount of scales on the attitude toward subordinated

or closely related concepts, including corporate social responsibility, corporate responsibility, corporate environmental sustainability, corporate citizenship, and business ethics, was found. An evaluation of the suitability of the identified scales for the purpose of measuring the attitude toward CS showed that certain commonalities can be drawn from the different scales. Yet none of the existing measurement scales captures the domain of the construct adequately (see Chapter 3). Consequently, the development of a new measurement scale was aimed for. The existing scales, however, served as a starting point and greatly contributed to the scale development.

Based upon the literature review of theoretical and empirical studies on CS, we generated a comprehensive list of 116 candidate items, which were intended to capture the economic, environmental and social domain of the construct CS. The scale development applied a reflective measurement approach. This is reasonable considering that a favorable attitude toward the three dimensions of sustainable business practices is best reflected by the different items, not vice versa. Furthermore, the items are certainly interchangeable, which also indicates a reflective measurement model (Diamantopoulos & Winkelhofer, 2001, p. 271). The initial item pool consisted partially of items adopted from existing scales (e.g. Aldag & Jackson, 1984; Aupperle, 1982; Furrer et al. 2010; Maignan, 2001; Maignan & Ferrell, 2000; Mohr & Webb, 2005; Turker, 2009) - either original or modified in terms of language or style. Furthermore, indicators from the GRI guidelines, which have been developed based on the TBL approach, served as a basis for additionally self-created items that fit the construct definition. According to domain sampling theory, a measurement instrument cannot cover every specific aspect of the domain of interest but it should represent the construct at hand. Hence, the developed items should form a scale that captures the domain of interest as far as possible to exhibit content validity (Hinkin, 1998, pp. 105-106). The 116 generated items incorporated actions that are descriptive of one of the three dimensions of the attitude toward CS, for instance the item *"pursue opportunities that provide the best rate of return"* represents corporate economic sustainability, *"foster programs to track and reduce its emissions"* stands for corporate environmental sustainability and *"support employees' lifelong learning by trainings and education"* serves as an example for corporate social sustainability. The final item list including the origin of each item is presented in Table 4.1 at the end of Chapter 4.3.

After finishing the item generation, several considerations informed the further scale development. Firstly, literature provides a range of techniques to assess attitudes, comprising, inter alia, ranking, rating, sorting, and choice techniques. Ranking yields ordinal data. Thus, it limits the scope of statistical analysis. In contrast, rating scales allow for more sophisticated statistical analyses. Sorting and choice techniques are impractical for questionnaire-based research (Zikmund, 1994, pp. 298-299). Based on these reasons, rating scales are the most common form of attitude assessment in management research and are used for the present scale development. In fact, various alternative types of rating scales exist, including simple

attitude scaling, category scaling, the summated rating scale method (Likert scale), semantic differential and numerical scales, the constant sum scale method (forced choice), the stapel scale, as well as types of graphic scales to only name a few (Blumberg, Cooper, & Schindler, 2008, p. 463-468; Zikmund, 1994, pp. 299-309). For the multi-dimensional construct of CSA, most of these forms of rating scales are impracticable. The majority of studies introduced in Chapter 3 applied Likert scales, whereas Aupperle et al. (1985), Smith and Blackburn (1988), and Smith et al. (2007) employed a forced choice methodology. The advantages and disadvantages of forced choice formats, which led to the disregard of this format for the scale at hand, were already discussed in Chapter 3. In accordance with the majority of empirical studies presented in the literature review in Chapter 3, this dissertation adopts a summated rating scale method (Likert scale) with a subdivision into three subscales, i.e. an economic, environmental, and social dimension of CS.

Each of the three subscales consists of multiple items. Applying multiple items offers various advantages in comparison to measuring a construct through a single item. Given that every subscale is composed of multiple items, many facets of the complex construct can be assessed, which are collectively more representative for the overall construct. Item specificity thereby averages out while the combination of multiple items simultaneously allows for better distinctions between different respondents' attitudes. Moreover, through the combination of multiple items measurement error can be reduced thus increasing the scale's reliability (Churchill, 1979, p. 66; Spector, 1992, p. 6). Another consideration was to construct a metric that is as reliable as possible but at the same time parsimonious as to minimize respondent fatigue, and thereby maximize the number of completely filled out questionnaires. Keeping an instrument short to reduce boredom, while at the same time ensuring the measurement accuracy of a complex construct, which increases with the number of items, involves the consideration of trade-offs (Hinkin, 1998, p. 109; Spector, 1992, p. 10). Hinkin (1998) recommended targeting four to six items per subscale (p. 109). Given the three subscales of the CSA instrument, this would mean a total recommendable number of 12 to 18 items for the entire scale. The literature review of empirical studies in Chapter 3 showed that the length of existing measurement instruments varied between three items (Pedersen, 2011) and 63 items (Kujala, 2010) indicating a large range of scale lengths in the existing literature. The final CSA scale, derived after the three pre-tests, includes 30 items; ten items per subscale.

In addition to deciding about an adequate measurement technique for the latent construct and the number of items, the question of item scaling needed to be clarified. Therefore, literature was consulted on the appropriate number of response choices to be included. As the scale is supposed to measure an attitude, a bipolar agreement response choice with anchors was adopted that asked subjects to indicate their extent to which they agree with the items. Hinkin (1998) emphasized that the number and nature of response choices used should yield enough variance in responses to allow for statistical analysis (p. 110). Recommendations for the num-

ber of response choices vary between five and nine (Hinkin, 1998, p. 110; Spector, 1992, p. 21). Accordingly, a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) was employed for the present CSA scale. A seven-point scale has the advantage that it does not overcharge the participant, as would be the case with a nine-point scale. In addition, a seven-point scale allows for more variance than a five-point scale. Furthermore, the midpoint of 4 (*neither agree nor disagree*) offers the advantage that respondents can indicate indifference to an aspect of the attitudinal object under investigation (Zikmund, 1994, p. 316).

Finally, in the instructions placed in front of the CSA scale, subjects were asked to imagine to be a manager of an enterprise and to report which of the following activities (items) their company should pursue to be successful in the long run (see the Appendix of Chapter 4 for a copy of the questionnaire). According to Spector (1992), providing a common frame of reference in the instructions to a scale mitigates the effect of respondents' idiosyncratic frames of reference in their agreement or disagreement with the items of the scale (p. 28). Furthermore, the instructions are to increase the involvement of respondents and thus the truthful reporting of their attitudes, and reduce social desirability bias.

In an attempt to obtain an item pool incorporating items that were both sufficiently distinct from each other and directly reflective of CSA, the initial set of 116 candidate items was further reduced prior to the pre-testing phase. Items were checked to only include one idea and thus avoid *double-barreled* statements (Churchill, 1979, p. 68; Hinkin, 1998, p. 108; Spector, 1992, p. 23). Accordingly, items with a too broad or with a too narrow content were dropped. Items that strongly overlapped were also eliminated. Likewise, items with technical terminology (e.g. biodiversity) and colloquialism were omitted in order to increase the usability of the scale in various populations and over time (Hinkin, 1998, p. 108; Spector, 1992, p. 25). After eliminating redundant items and revising or deleting items with imprecise or ambiguous formulations, the item list was narrowed down from 116 to 48 items. The preselected 48 items were then combined into a single measurement scale for the pre-testing stage. The described procedure aimed at constructing a scale that is as generally applicable and comprehensible as possible to most individuals regardless of age, occupational background, work experience or nationality.

4.3 Pre-Testing

In line with Churchill's (1979) suggestions, a scale evaluation approach that encompasses pre-tests and a pilot study was employed to further improve the accuracy of the CSA scale, to assess whether the scale captures the construct as desired and to ensure that important aspects of corporate sustainability were not omitted. Given that the appropriate number of items is an important issue in scale design, two pre-tests with experienced researchers and experts of the

domain were conducted to further refine the scale. In addition, the scale was administered to a group of 30 students in a third pre-test. The pre-testing took place between March and June 2011 to assess quality and content validity of the CSA scale. The three pre-tests were followed by a pilot study with German and international business students at the Otto-von-Guericke University Magdeburg.

4.3.1 First Pre-Test

The first pre-test aimed at further reducing the number of items and refining the scale design. For this purpose a list of the 48 preselected items and the corresponding instructions for the future CSA scale were submitted to seven experts, including four faculty members of the Otto-von-Guericke University Magdeburg, Germany with expertise in questionnaire design and three researchers from other universities with expertise in the field of CSR and CS. The international background of the experts, coming from Germany, Finland, China, and Brazil, helped to improve the intercultural usability of the developed scale. The experts received the preliminary 48-item measurement scale and were asked to firstly match each item to one of the three dimensions of CS and secondly to evaluate the appropriateness of each item for the matched scale on a four point scale, (1 - *appropriate*, 2 - *rather appropriate*, 3 - *rather inappropriate*, 4 - *inappropriate*). This procedure, known as substantive validity analysis technique (Anderson & Gerbing, 1991) and Lawshe approach (Lawshe, 1975), is applied in the pre-test to evaluate whether the items are reflective of the construct of interest (Anderson & Gerbing, 1991, p. 732). The procedure, thus, helps to establish content validity of the scale. Based on the experts' ratings, for each item the proportion of assignments to the intended subscale was evaluated as was the degree of appropriateness stated by the experts. The proportion of assignments to the posited construct was measured with the *proportion of substantive agreement* (p_{sa}), which is calculated with the following formula (Anderson & Gerbing, 1991, p. 734):

$$p_{sa} = \frac{n_c}{N} \tag{4.1}$$

with:

n_c number of experts who assigned an item to its intended construct

N total number of experts

The proportion of substantive agreement can range between 0 and 1, with larger values being indicative of a greater substantive validity. Complementing this index, the *substantive-validity coefficient* (c_{sv}) was calculated to evaluate to which extent respondents assigned an item to an unintended construct. The substantive-validity coefficient is defined as follows (Anderson & Gerbing, 1991, p. 734):

$$c_{sv} = \frac{n_c - n_o}{N} \qquad\qquad\qquad (4.2)$$

with:

n_c number of experts who assigned an item to its intended construct

n_o highest number of assignments of the item to any other construct in the set

N total number of experts

The values of the substantive-validity coefficient can range between -1.0 and 1.0 with greater values indicating greater substantive validity. Moreover, the extent to which respondents considered the item to be essential (appropriate and rather appropriate) to the intended construct was measured by means of the *content-validity ratio* (CVR) (Lawshe, 1975, p. 567):

$$CVR = \frac{n_e - N/2}{N/2} \qquad\qquad\qquad (4.3)$$

with:

n_e number of respondents judging an item to be essential

N total number of experts

If less than 50 percent of the experts consider an item essential for the assigned scale, the content-validity ratio becomes negative. Based on the described indices, items that matched more than one dimension according to the experts' assessment and items with low ratings on the posited dimension were eliminated from the item pool. Accordingly, 15 items were removed from the item battery and the wording of eight items was revised. Moreover, the experts were invited to give comments and feedback on scale instructions, response choice anchors, scale design, and any additional observation they made. Feedback on these aspects was likewise incorporated. In addition, based on the feedback, six items were reversed (two items in each of the three CSA subscales), i.e. they were negatively phrased. Including positively and negatively worded items reduces biases caused by response tendencies, most notably the acquiescence response bias, which is the tendency of respondents to agree or disagree with items independent of their content (Churchill, 1979, p. 68; De Vellis, 2003, p. 69; Spector, 1992, p. 24-25). When reversing items, it is, however, important to avoid negatives such as *not* or *no* to reduce the likelihood of respondents to miss such negations (Spector, 1992, p. 26). Despite the advantages that reversed items may offer, Hinkin (1998) reported contradictory evidence regarding the effectiveness of reversed items and thus stressed the importance of careful wording to ensure the appropriate interpretation by respondents (p. 108). This is why special attention was given to formulations of the items and respondents' interpretations in the second and third pre-test as well as the pilot study. After revising or deleting items with apparent wording problems, the item list was reduced to 33 items.

4.3.2 Second Pre-Test

The second pre-test aimed at further advancing content validity of the developed scale. Content validity depends on how well the researchers create measurement items to cover the domain of the variable being measured (Nunnally, 1978, p. 93). We consulted seven reputable business researchers in the field of CSR and CS (Professors and Assistant Professors) from Australia, Germany, and the USA. In line with the procedure of the first pre-test, the group of experts was asked to match each item of the reduced list of 33 items with the perceived appropriate dimension of CS and to rate the items with respect to their essentiality for the scale on a 4-point, ranging from 1 (*appropriate*) to 4 (*inappropriate*). Certainly, expert opinions do not guarantee that content validity is obtained, but they may increase the likelihood of achieving content adequacy of the scale. In addition, the experts were asked to give feedback on any additional observation they made. Four out of seven experts replied to the email request and provided valuable feedback and suggestions on how to improve the scale to capture attitudes toward corporate sustainability.

Items with low ratings on the posited dimension and items that matched more than one dimension according to the experts were eliminated from the item pool. Consequently, another three items were discarded from the scale. The final pool of items contained 10 economic, 10 environmental, and 10 social items. Furthermore, final consultation with experts at the Otto-von-Guericke University led to the reversion of another three items to avoid acquiescence bias, yielding in total seven positively and three negatively worded items per CSA subscale. The statements on economic, environmental and social aspects of corporate sustainability were then distributed randomly in a single measurement scale to counteract the likelihood of a halo response pattern of subjects' answers. The introduction for the CSA scale were also revised by altering *"Imagine you are one of the managers of a company"* to *"You are a manager of an enterprise"* to make this phrase sound more explicit and assertive. The complete instruction reads as follows: *"You are the manager of an enterprise. Which of the following activities does your company need to pursue, in order to be successful in the long run? In your opinion, your company should…,"* followed by the listed items, an example of which was *". . . efficiently produce goods and services."*

4.3.3 Third Pre-Test

After the explained adjustments resulting from experts' comments during the two pre-tests, the 30-item scale was included into the future questionnaire (see the Appendix of Chapter 4 for a copy of the questionnaire). This 133-item questionnaire also included other measurement scales, which are explained in Chapter 5. The 30-item CSA scale as part of this questionnaire underwent a third pre-test with 30 German undergraduate and graduate business students, which were enrolled at the Faculty of Management and Economics at the Otto-von-

Guericke University Magdeburg, a public university located in the federal state of Saxony-Anhalt in Germany. The students were asked to fill out the questionnaire, with Section A encompassing the CSA scale. The focus of this third pre-test was to evaluate the comprehensibility of the items among university students, as they constitute the population of interest for the later conducted large scale studies. While the first two pre-tests were conducted with an English language version of the CSA scale, the third pre-test was carried out in German. Accordingly, the revised 30-item scale was translated from English into German. In order to maintain translation equivalence (Malhotra, Agarwal, & Peterson, 1996, p. 9) across the different language versions of the questionnaire, a standard translation back-translation procedure was applied, as suggested by Brislin (1970, pp. 214-215). That implied two native speakers to independently translate the questionnaire from English into German. After comparing the translations and resolving any wording discrepancies, a third person blindly back-translated the concerted version. Final differences between the original, back-translated and translated version were then resolved.

The students had to rate the 30 items of the CSA scale on a seven-point Likert scale with 1 representing *"strongly disagree"*, 4 *"neither agree nor disagree"*, and 7 *"strongly agree"*. Response options 2, 3, 5 and 6 had no verbal anchor. The students knew that they took part in a pre-test and were supposed to note down all problems with respect to instructions, wording of the items, etc. The completion of the questionnaire was followed by a group discussion to identify any remaining problems in respondents' interpretations of items or instructions. The suggestions made by the students led to only minor modifications. Following the group discussion, the data was analyzed using SPSS 20.0 software. The sample size of 30 respondents is appropriate to perform qualitative analysis and some basic statistical analyses. Preliminary analysis concerning the internal consistency of the measurement scale was carried out both at the subscale- and item level. At the subscale level, *Cronbach's alpha* (Cronbach, 1951) and the *inter-item correlation* (IIC) provided fairly good results for each of the three CSA subscales (see Table 4.2 at the end of Chapter 4). Cronbach's alpha was .94 for the environmental CSA subscale, .79 for the economic CSA subscale and .91 for the social CSA subscale, and thus above the recommended threshold of .70 (Nunnally, 1978, p. 245). The average inter-item correlations were above the suggested threshold of .30 (Robinson, Shaver, & Wrigthsman, 1991, p. 13), with .61 for the environmental CSA subscale, .31 for the economic CSA subscale and .50 for the social CSA subscale.

While Cronbach's alpha and the average inter-item correlation are used to assess reliability of the entire scale, or in this case of the three CSA subscales, corrected *item-total correlation* and *Cronbach's alpha if-item-deleted* are employed to detect problems with single items. Accordingly, the corrected item-total correlation and Cronbach's alpha if-item-deleted were examined to identify how well each item contributes to measuring the construct (Spector, 1992, p. 30). Item 14 showed a negative corrected item-total correlation with its intended economic

CSA subscale.[22] This could be an indicator of respondents not perceiving this item as a reversed one. Indeed, this was also mentioned in the group discussion. In response to these findings, we modified item 14 slightly. The corrected item-total correlations of item 11, item 28, and item 30 also turned out to be below the suggested threshold of .50 (Zaichkowsky, 1985, p. 343), calling for special attention to be devoted to these items in the subsequent pilot study and later conducted large-scale studies. Again, the statistical findings provided here have to be treated with caution due to the small underlying sample ($n = 30$). For example, exploratory or confirmatory factor analyses require larger samples. Therefore, we refrained from conducting factor analysis and subsequent calculations of statistical measures (e.g. composite reliability, average variance extracted) or fit indices.

As a final step, the means of each subscale were calculated. Given the majors of the student participants, it is not surprising that the students evaluated the economic CS dimension highest with a mean subscale index score of $M = 5.71$ ($SD = .69$), closely followed by social and environmental CS, with mean subscale index scores of $M = 5.64$ ($SD = .93$) and $M = 5.44$ ($SD = .1.09$) respectively. Mean differences between the subscales were not significant.

Taken together, the three pre-tests were of great help in further purifying, consolidating, and reducing the CSA scale to a more practicable length and to improve the comprehensibility of the scale. The experts' and students' comments and suggestions collected also enabled problem identification and resolution of issues, such as scale instructions, wording, response choice anchoring, and layout. Seven established CSR and sustainability experts have positively evaluated the adequacy of the remaining 30 items. In addition, the student pre-test with a first administration of the final CSA scale has provided encouraging evidence of the applicability of the proposed scale. Overall, the scale development process resulted in a scale including 30 items, with 10 items for the economic, environmental, and social CS dimension, respectively. The final CSA scale items and an overview of the origin and legitimacy of the items are presented on the following page in Table 4.1.

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[22] For a list of the 30 items and their corresponding item number turn to Table 4.1 on the next page.

Table 4.1: CSA Scale Items Ordered by Dimension

Dimension	Item no. in scale	CSA Scale Item	Source	Original item
ENV1*	3	implement programs to minimize the negative impact of organizational activities on the natural environment.	Turker 2009 *(Modified)*	implements special programs to minimize its negative impact on the natural environment.
ENV2* (R)	5	deplete non-renewable resources (e.g. fossil fuels).	-	-
ENV3*	9	foster programs to track and reduce its emissions.	-	-
ENV4* (R)	11	also proceed with activities for which environmental risks can only be incompletely evaluated and controlled.	Furrer et al. 2010 *(Modified)*	only proceed with activities for which environmental risks can be fully evaluated and controlled.
ENV5*	13	have factory programs to conserve water and energy.	Mohr & Webb 2005	have factory programs to conserve water and energy.
ENV6*	16	redesign and re-engineer products and services to make them more environmentally friendly.	-	-
ENV7*	22	invest in "cleaner" technology.	-	-
ENV8* (R)	23	accept the damage to natural habitats caused by the organization's activities.	Turker 2009 *(Modified)*	implements special programs to minimize its negative impact on the natural environment.
ENV9*	26	establish effective recycling and reuse systems.	-	-
ENV10*	29	increase the use of regenerative energy sources.	-	-
ECON1	2	maintain a strong competitive position in its industry.	Aupperle 1982	maintain a strong competitive position in its industry.
ECON2	6	efficiently produce goods and services.	Aldag & Jackson 1984	efficiently produce goods and services
ECON3	8	pursue opportunities that provide the best rate of return.	Aupperle 1982 *(Modified)*	seek opportunities that provide the best rate of return.
ECON4 (R)	10	disregard profit-maximization.	Maignan 2001 *(Modified)*	maximize profits.
ECON5 (R)	14	concentrate on maximizing the short-term returns.	Aupperle 1982 *(Modified)*	maximize its long-term return on investment.
ECON6*	18	invest in research and development.	-	-
ECON7	20	control employees' productivity.	Maignan & Ferrell 2000 *(Modified)*	closely monitor employees' productivity.

Dimension	Item no. in scale	CSA Scale Item	Source	Original item
ECON8	25	be concerned with improving economic performance.	Maignan 2001 *(Modified)*	always improve economic performance.
ECON9	28	control the production costs strictly.	Maignan 2001	control their production costs strictly.
ECON10 (R)	30	treat product pricing as an issue of subordinate importance.	-	-
SOC1*	1	establish a co-operative organizational culture.	-	
SOC2*	4	take precautionary measures to ensure the safety of employees.	Turker 2009 *(Modified)*	provides a safe and healthy working environment to all its employees.
SOC3 (R)	7	ignore community service and charities.	-	-
SOC4	12	implement flexible work time policies for its employees.	Turker 2009 *(Modified)*	implements flexible policies to provide a good work and life balance for its employees.
SOC5*	15	help solve societal problems.	Maignan 2001 *(Modified)*	Help solve social problems.
SOC6*	17	implement strategies to manage the health of employees.	Turker 2009 *(Modified)*	provides a safe and healthy working environment to all its employees.
SOC7 (R)	19	strive for uniformity of its workforce in terms of age, gender, and race.	Maignan & Ferrell 2000 *(Modified)*	have programs that encourage the diversity of our workforce (in terms of age, gender, and race).
SOC8*	21	implement internal policies that ensure equal opportunities in employees' promotion.	Maignan & Ferrell 2000 *(Modified)*	Internal policies prevent discrimination in employees' compensation and promotion.
SOC9*	24	support employees' lifelong learning by trainings and education.	Maignan & Ferrell 2000 *(Modified)*	supports employees who acquire additional education.
SOC10* (R)	27	provide wages below market standards.	-	-

Note: ENV = corporate environmental sustainability; ECON = corporate economic sustainability, SOC = corporate social sustainability; R = negatively worded item. The content of all 30 items is also embedded in the G3 Guidelines of the Global Reporting Initiative and, therefore, covers the triple bottom line. Items with a * are also in line with the proposed criteria of the Dow Jones Sustainability Group Index (2011) and/or the OECD Guidelines for MNEs (OECD, 2011) and/or the ICC Business Charter for Sustainable Development (ICC Deutschland, 2012).

4.4 Pilot Study

Subsequent to the pre-tests and scale purification, the next step in validating the CSA scale encompassed a pilot study. For that purpose, the finalized 30-item CSA scale was administered to a student sample of two undergraduate business courses (Human Resource Management and Introduction to Management) at the Faculty of Management and Economics, University of Magdeburg, Germany. The students were asked to voluntarily participate in the study by filling out the questionnaire at the beginning of the class. While German students filled out the German language version, international students received an equivalent English version. Since the students were part of an English study program, English language proficiency could be assumed. All questionnaires were collected directly after their completion. Following the data collection, the questionnaires with incomplete data or evident answering patterns were removed, resulting in 119 usable questionnaires, with 77 (64.7%) female and 42 (35.3%) male respondents. In line with suggestions of Spector (1992, pp. 65-66) a retest with the same respondents was carried out to evaluate the same sample measurement stability over time. The retest, which was conducted three weeks after the initial pilot study test, was filled out by 72 participants of the original pilot study sample. To enable the matching of test and retest, but at the same time allow for anonymity of the respondents, we asked students to provide their initials and birth date on the test and retest questionnaire. Summarized results of the third pre-test from Chapter 4.3.3 and the pilot study test and retest, including descriptive statistics, internal consistency reliabilities of the CSA subscales and an overview of items that might be problematic according to the corrected item-total correlation and Cronbach's alpha if-item-deleted criteria are presented in Table 4.2. Pilot study test and retest were further subdivided in one sample ($n = 119$) that includes German and international students and in a subsample ($n = 77$), which only includes the German respondents.

In the following, we will refer to the international sample ($n = 119$). The statistics for the German subsample of the pilot study are to be found in Table 4.2. As shown in Table 4.2, the average age in the pilot study test ($n = 119$) was 22.06 ($SD = 1.83$). All of the participants of the pilot study were undergraduates studying for a bachelor's degree in business economics or related fields. The CSA subscale means of the respondents in the pilot study were well above the neutral midpoint of 3.5, inferring a favorable attitude toward all three dimensions of corporate sustainability. As in the third pre-test, the student sample in the pilot evaluated economic CS ($M = 5.63$) highest and environmental CS ($M = 5.13$) lowest. Subscale' reliabilities for the international sample of the pilot study were as follows: .83 for the environmental and economic subscale and .75 for the social subscale. Overall, the subscales exhibited good internal consistency reliability. However, examining the corrected item-total correlation and the Cronbach's alpha if item deleted revealed some issues, particularly with regard to the negatively formulated items. For example, in the environmental CSA subscale item 5, item 11, and item 23 (all reversed items) were found to have corrected item-total correlations that were lower than the suggested threshold of .50 (Zaichkowsky, 1985, p. 343). In the economic CSA

subscale, the reversed items 14 and 30, as well item 20 were also below the cutoff point. For the social CSA subscale, items 7, 12, 15, 19 and 27 were below the threshold. It should be noted that although the sample size of 119 in the pilot study test, in general, would have fulfilled the minimum requirements for a factor analysis, no exploratory factor analysis or confirmatory factor analysis were undertaken. As factor analysis most certainly would have resulted in the deletion of single items, comparability between the test and retest would not be ensured. Factor analysis should not be performed with sample sizes smaller than 100 to ensure accuracy. An elaborate discussion on the requirements for factor analysis is provided in Chapter 5.2.1.

Following Thompson (2009), pilot study test and retest Cronbach's alpha coefficients for the CSA subscales and Pearson's product moment correlations were calculated to evaluate the same sample stability over time. The results for the international sample as well as for the German subsample are shown in Table 4.2. The findings reported for the international sample are based on the 72 respondents who filled out both test and retest. The statistics of this test subsample are reported in parentheses in Table 4.2. The retest Cronbach's alpha was .87 for the environmental subscale compared with the test alpha of .80. The economic subscale had a retest alpha of .81 compared with a test alpha of .75, and the social subscale had a retest alpha of .77 compared with a test alpha of .57. The test-retest Pearson's product moment correlations were moderate to high for the 72 student participants: for the economic subscale it was .47 ($p < .01$), for the environmental subscale it was .77 ($p < .001$) and for the social subscale it was .70 ($p < .001$). Furthermore, the test and retest subscale means were not significantly different. In conclusion, acceptable stability of the CSA scale in the short run can be inferred from the results. While the test-retest coefficients of stability of the environmental and social subscale met or even exceeded suggested thresholds (Robinson et al., 1991), the results for the economic subscale were relatively low.

Based on the results of the pre-tests and pilot study test and retest, the next chapter will deal with the first large scale study of the CSA scale that was conducted with more than 300 respondents in Germany. The large scale study was undertaken to further evaluate the psychometric properties of the developed CSA scale. Due to the large sample size ($n = 302$), more elaborate statistical tests on whether the developed metric exhibits a three-dimensional structure and the further assessment of the reliability and validity of the measurement instrument can be carried out.

Table 4.2: CSA Scale Descriptive Statistics and Reliabilities

	3rd pre-test	Pilot study test		Pilot study retest	
	German sample	International sample	German subsample	International sample	German subsample
Descriptive statistics (Frequency)					
Total	30	119 (72)$^{\pm}$	77 (50)	72	50
Male	18	42 (26)	24 (15)	26	15
Female	12	77 (46)	53 (35)	46	35
Mean age	24.2	22.06 (21.94)	22.05 (21.80)	21.94	21.80
SD	1.87	1.83 (1.74)	1.68 (1.53)	1.74	1.53
Undergraduates	24	119 (72)	77 (50)	72	50
Business students	30	112 (66)	72 (46)	66	46
Means					
Mean ENV	5.44	5.13 (5.27)	5.16 (5.24)	5.18	5.16
SD	1.09	.87 (.74)	.91 (.76)	.87	.94
Mean ECON	5.71	5.63 (5.70)	5.71 (5.73)	5.62	5.58
SD	.69	.82 (.64)	.82 (.50)	.73	.79
Mean SOC	5.64	5.47 (5.57)	5.47 (5.52)	5.59	5.56
SD	.93	.77 (.55)	.74 (.54)	.67	.71
Cronbach's alpha					
ENV	.94	.83 (.80)	.89 (.87)	.87	.92
ECON	.79	.83 (.75)	.87 (.67)	.81	.87
SOC	.91	.75 (.57)	.78 (.59)	.77	.83
Inter-item correlation					
ENV	.61	.35 (.32)	.45 (.42)	.44	.55
ECON	.31	.34 (.23)	.41 (.20)	.32	.41
SOC	.51	.27 (.16)	.30 (.17)	.29	.35
Corrected item-total correlation					
ENV items < .50	11	5, 11, 23	5, 11	5, 11, 23	5
ECON items < .50	14, 28, 30	14, 20, 30	14, 20, 30	14, 20, 30	14, 20, 30
SOC items < .50	-	7, 12, 15, 19, 27	7, 12, 15, 19	1, 15, 19, 27	4, 15, 19
Cronbach's alpha if item deleted*					
ENV items	5, 11	5, 11, 23	5, 11	5, 23	5
ECON items	14, 28	14, 30	14, 20, 30	14, 30	14, 30
SOC items	-	7, 19, 27	19	19	19

Note: $^{\pm}$ Figures in parentheses are for the subjects that filled out both the test and retest. * The items listed under Cronbach's alpha if item deleted are items that would increase Cronbach's alpha if they were deleted from the scale. ENV = attitude toward corporate environmental sustainability, ECON = attitude toward corporate economic sustainability, SOC = attitude toward corporate social sustainability, SD = standard deviation.

Appendix to Chapter 4

Table 4.3: CSA Scale Items Ordered by Appearance in the Questionnaire

Item no. in scale	Items
1	establish a co-operative organizational culture.
2	maintain a strong competitive position in its industry.
3	implement programs to minimize the negative impact of organizational activities on the natural environment.
4	take precautionary measures to ensure the safety of employees.
5	deplete non-renewable resources (e.g. fossil fuels). *(reverse scored)*
6	efficiently produce goods and services.
7	ignore community service and charities. *(reverse scored)*
8	pursue opportunities that provide the best rate of return.
9	foster programs to track and reduce its emissions.
10	disregard profit-maximization. *(reverse scored)*
11	also proceed with activities for which environmental risks can only be incompletely evaluated and controlled. *(reverse scored)*
12	implement flexible work time policies for its employees.
13	have factory programs to conserve water and energy.
14	concentrate on maximizing the short-term returns. *(reverse scored)*
15	help solve societal problems.
16	redesign and re-engineer products and services to make them more environmentally friendly.
17	implement strategies to manage the health of employees.
18	invest in research and development.
19	strive for uniformity of its workforce in terms of age, gender, and race. *(reverse scored)*
20	control employees' productivity.
21	implement internal policies that ensure equal opportunities in employees' promotion.
22	invest in "cleaner" technology.
23	accept the damage to natural habitats caused by the organization's activities. *(reverse scored)*
24	support employees' lifelong learning by trainings and education.
25	be concerned with improving economic performance.
26	establish effective recycling and reuse systems.
27	provide wages below market standards. *(reverse scored)*
28	control the production costs strictly.
29	increase the use of regenerative energy sources.
30	treat product pricing as an issue of subordinate importance. *(reverse scored)*

Otto-von-Guericke University Magdeburg
Department of Management and Economics
Chair in International Management
P.O. Box 4120, 39016 Magdeburg, Germany

OTTO VON GUERICKE UNIVERSITÄT MAGDEBURG

FAKULTÄT FÜR WIRTSCHAFTSWISSENSCHAFT

Thank you in advance for your participation in this international study. The survey comprises 10 pages. Completion of this survey will take about 20 minutes. Please take your time to read each question/statement with the respective instructions carefully. There are no "correct" or "incorrect" responses. We are merely interested in your personal opinion. **Please do not leave any question/statement unanswered.** If you should wish to change an answer, please cross out your initial response clearly and mark your final choice. Your answers will be treated confidentially and anonymously.

Please note:

1. You respond to a question/statement by marking that response option box which most closely resembles your personal opinion.
2. Only mark **one** box per question/statement, please.

Section A

Please indicate on a scale ranging from 1 *"strongly disagree"* to 7 *"strongly agree"* to which extent you agree or disagree with the following statements (A1 to A30).

You are the manager of an enterprise. Which of the following activities does your company need to pursue, in order to be successful in the long run?

In your opinion, your company should…	strongly disagree 1	2	3	neither agree nor disagree 4	5	6	strongly agree 7
A1 establish a co-operative organizational culture.	☐	☐	☐	☐	☐	☐	☐
A2 maintain a strong competitive position in its industry.	☐	☐	☐	☐	☐	☐	☐
A3 implement programs to minimize the negative impact of organizational activities on the natural environment.	☐	☐	☐	☐	☐	☐	☐
A4 take precautionary measures to ensure the safety of employees.	☐	☐	☐	☐	☐	☐	☐
A5 deplete non-renewable resources (e.g. fossil fuels).	☐	☐	☐	☐	☐	☐	☐
A6 efficiently produce goods and services.	☐	☐	☐	☐	☐	☐	☐
A7 ignore community service and charities.	☐	☐	☐	☐	☐	☐	☐
A8 pursue opportunities that provide the best rate of return.	☐	☐	☐	☐	☐	☐	☐

Section A

	In your opinion, your company should…	strongly disagree			neither agree nor disagree			strongly agree
		1	2	3	4	5	6	7
A9	foster programs to track and reduce its emissions.	☐	☐	☐	☐	☐	☐	☐
A10	disregard profit-maximization.	☐	☐	☐	☐	☐	☐	☐
A11	also proceed with activities for which environmental risks can only be incompletely evaluated and controlled.	☐	☐	☐	☐	☐	☐	☐
A12	implement flexible work time policies for its employees.	☐	☐	☐	☐	☐	☐	☐
A13	have factory programs to conserve water and energy.	☐	☐	☐	☐	☐	☐	☐
A14	concentrate on maximizing the short-term returns.	☐	☐	☐	☐	☐	☐	☐
A15	help solve societal problems.	☐	☐	☐	☐	☐	☐	☐
A16	redesign and re-engineer products and services to make them more environmentally friendly.	☐	☐	☐	☐	☐	☐	☐
A17	implement strategies to manage the health of employees.	☐	☐	☐	☐	☐	☐	☐
A18	invest in research and development.	☐	☐	☐	☐	☐	☐	☐
A19	strive for uniformity of its workforce in terms of age, gender, and race.	☐	☐	☐	☐	☐	☐	☐
A20	control employees' productivity.	☐	☐	☐	☐	☐	☐	☐
A21	implement internal policies that ensure equal opportunities in employees' promotion.	☐	☐	☐	☐	☐	☐	☐
A22	invest in "cleaner" technology.	☐	☐	☐	☐	☐	☐	☐
A23	accept the damage to natural habitats caused by the organization's activities.	☐	☐	☐	☐	☐	☐	☐
A24	support employees' lifelong learning by trainings and education.	☐	☐	☐	☐	☐	☐	☐
A25	be concerned with improving economic performance.	☐	☐	☐	☐	☐	☐	☐
A26	establish effective recycling and reuse systems.	☐	☐	☐	☐	☐	☐	☐
A27	provide wages below market standards.	☐	☐	☐	☐	☐	☐	☐
A28	control the production costs strictly.	☐	☐	☐	☐	☐	☐	☐
A29	increase the use of regenerative energy sources.	☐	☐	☐	☐	☐	☐	☐
A30	treat product pricing as an issue of subordinate importance.	☐	☐	☐	☐	☐	☐	☐

In this section, we would like to ask you for your personal opinion on work- and life related statements and values. To which extent do you agree or disagree (ranging from 1 *"strongly disagree"* to 7 *"strongly agree"*) with the following statements (B1 to B26)?

		strongly disagree			neither agree nor disagree			strongly agree
		1	2	3	4	5	6	7
B1	People in higher positions should make most decisions without consulting people in lower positions.	☐	☐	☐	☐	☐	☐	☐
B2	It is more important for men to have a professional career than it is for women.	☐	☐	☐	☐	☐	☐	☐
B3	Standardized work procedures are helpful.	☐	☐	☐	☐	☐	☐	☐
B4	Group welfare is more important than individual rewards.	☐	☐	☐	☐	☐	☐	☐
B5	People in higher positions should not ask the opinions of people in lower positions too frequently.	☐	☐	☐	☐	☐	☐	☐
B6	Men usually solve problems with logical analysis; women usually solve problems with intuition.	☐	☐	☐	☐	☐	☐	☐
B7	It is important to closely follow instructions and procedures.	☐	☐	☐	☐	☐	☐	☐
B8	Individuals should stick with the group even through difficulties.	☐	☐	☐	☐	☐	☐	☐
B9	Rules and regulations are important because they inform me of what is expected of me.	☐	☐	☐	☐	☐	☐	☐
B10	Individuals should only pursue their goals after considering the welfare of the group.	☐	☐	☐	☐	☐	☐	☐
B11	Instructions for operations are important.	☐	☐	☐	☐	☐	☐	☐
B12	People in higher positions should avoid social interaction with people in lower positions.	☐	☐	☐	☐	☐	☐	☐
B13	Group success is more important than individual success.	☐	☐	☐	☐	☐	☐	☐
B14	People in lower positions should not disagree with decisions by people in higher positions.	☐	☐	☐	☐	☐	☐	☐
B15	Group loyalty should be encouraged even if individual goals suffer.	☐	☐	☐	☐	☐	☐	☐
B16	Individuals should sacrifice self-interest for the group.	☐	☐	☐	☐	☐	☐	☐
B17	It is important to have instructions spelled out in detail so that I always know what I'm expected to do.	☐	☐	☐	☐	☐	☐	☐

Section B

	strongly disagree 1	2	3	neither agree nor disagree 4	5	6	strongly agree 7
B18 Solving difficult problems usually requires an active, forcible approach, which is typical of men.	☐	☐	☐	☐	☐	☐	☐
B19 People in higher positions should not delegate important tasks to people in lower positions.	☐	☐	☐	☐	☐	☐	☐
B20 There are some jobs that a man can always do better than a woman.	☐	☐	☐	☐	☐	☐	☐

Please rate the importance to you personally of each of the following statements (ranging from 1 *"of very little or no importance"* to 7 *"very important"*):

	of very little or no importance 1	2	3	of moderate importance 4	5	6	very important 7
B21 Careful management of money (Thrift)	☐	☐	☐	☐	☐	☐	☐
B22 Going on resolutely in spite of opposition (Persistence)	☐	☐	☐	☐	☐	☐	☐
B23 Personal steadiness and stability	☐	☐	☐	☐	☐	☐	☐
B24 Long-term planning	☐	☐	☐	☐	☐	☐	☐
B25 Giving up today's fun for success in the future	☐	☐	☐	☐	☐	☐	☐
B26 Working hard for success in the future	☐	☐	☐	☐	☐	☐	☐

Section C

Now you are to ask yourself: **"What values are important to ME as guiding principles in MY life, and what values are less important to me?"** There are two lists of values on the following four pages. In the parentheses following each value is an explanation that may help you to understand its meaning. Before you begin:

1) Please read the values in **VALUES LIST I** (C1 to C30) completely.
2) Choose at first that value which is of **supreme importance (7)** to you. Ordinarily there are no more than one or two such values.
3) Next, choose the value that is most **opposed to your values (-1)**. If there is no such value, choose the value least important to you and rate it 0 or 1, according to its importance to you.
4) Only then, rate the rest of the values in VALUES LIST I.

VALUES LIST I	opposed to my values	not important			important			very important	of supreme importance
	-1	0	1	2	3	4	5	6	7
C1 EQUALITY (equal opportunity for all)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C2 INNER HARMONY (at peace with myself)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C3 SOCIAL POWER (control over others, dominance)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C4 PLEASURE (gratification of desires)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C5 FREEDOM (freedom of action and thought)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C6 A SPIRITUAL LIFE (emphasis on spiritual not material matters)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C7 SENSE OF BELONGING (feeling that others care about me)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C8 SOCIAL ORDER (stability of society)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C9 AN EXCITING LIFE (stimulating experiences)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C10 MEANING IN LIFE (a purpose in life)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C11 POLITENESS (courtesy, good manners)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C12 WEALTH (material possessions, money)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C13 NATIONAL SECURITY (protection of my nation from enemies)	☐	☐	☐	☐	☐	☐	☐	☐	☐

VALUES LIST I continued	opposed to my values	not important			important			very important	of supreme importance
	-1	0	1	2	3	4	5	6	7
C14 SELF RESPECT (belief in one's own worth)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C15 RECIPROCATION OF FAVORS (avoidance of indebtedness)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C16 CREATIVITY (uniqueness, imagination)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C17 A WORLD AT PEACE (free of war and conflict)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C18 RESPECT FOR TRADITION (preservation of time-honored customs)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C19 MATURE LOVE (deep emotional & spiritual intimacy)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C20 SELF-DISCIPLINE (self-restraint, resistance to temptation)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C21 PRIVACY (the right to have a private sphere)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C22 FAMILY SECURITY (safety for loved ones)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C23 SOCIAL RECOGNITION (respect, approval by others)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C24 UNITY WITH NATURE (fitting into nature)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C25 A VARIED LIFE (filled with challenge, novelty and change)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C26 WISDOM (a mature understanding of life)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C27 AUTHORITY (the right to lead or command)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C28 TRUE FRIENDSHIP (close, supportive friends)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C29 A WORLD OF BEAUTY (beauty of nature and the arts)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C30 SOCIAL JUSTICE (correcting injustice, care for the weak)	☐	☐	☐	☐	☐	☐	☐	☐	☐

Section C

Let us now turn to the second list. Before you begin:

1) Please read the values in **VALUES LIST II** (C31 to C57) completely.
2) Choose at first that value which is of *supreme importance (7)* to you. Ordinarily there are no more than one or two such values.
3) Next, choose the value that is most *opposed to your values (-1)*. If there is no such value, choose the value least important to you and rate it 0 or 1, according to its importance to you.
4) Only then, rate the rest of the values in VALUES LIST II.

VALUES LIST II	opposed to my values	not important			important			very important	of supreme importance
	-1	0	1	2	3	4	5	6	7
C31 INDEPENDENT (self-reliant, self-sufficient)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C32 MODERATE (avoiding extremes of feeling & action)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C33 LOYAL (faithful to my friends, group)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C34 AMBITIOUS (hard-working, aspiring)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C35 BROADMINDED (tolerant of different ideas and beliefs)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C36 HUMBLE (modest, self-effacing)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C37 DARING (seeking adventure, risk)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C38 PROTECTING THE ENVIRONMENT (preserving nature)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C39 INFLUENTIAL (having an impact on people and events)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C40 HONORING OF PARENTS AND ELDERS (showing respect)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C41 CHOOSING OWN GOALS (selecting own purposes)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C42 HEALTHY (not being sick physically or mentally)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C43 CAPABLE (competent, effective, efficient)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C44 ACCEPTING MY PORTION IN LIFE (submitting to life's circumstances)	☐	☐	☐	☐	☐	☐	☐	☐	☐

	VALUES LIST II **continued**	opposed to my values	not important			important			very important	of supreme importance
		-1	0	1	2	3	4	5	6	7
C45	HONEST (genuine, sincere)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C46	PRESERVING MY PUBLIC IMAGE (protecting my "face")	☐	☐	☐	☐	☐	☐	☐	☐	☐
C47	OBEDIENT (dutiful, meeting obligations)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C48	INTELLIGENT (logical, thinking)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C49	HELPFUL (working for the welfare of others)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C50	ENJOYING LIFE (enjoying food, sex, leisure, etc.)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C51	DEVOUT (holding to religious faith & belief)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C52	RESPONSIBLE (dependable, reliable)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C53	CURIOUS (interested in everything, ex-ploring)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C54	FORGIVING (willing to pardon others)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C55	SUCCESSFUL (achieving goals)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C56	CLEAN (neat, tidy)	☐	☐	☐	☐	☐	☐	☐	☐	☐
C57	SELF-INDULGENT (doing pleasant things)	☐	☐	☐	☐	☐	☐	☐	☐	☐

Section D

Let us now turn to a totally different topic. Please indicate how desirable you would find employment at each of the following types of employers (ranging from 1 *"undesirable"* to 7 *"highly desirable"*):

		undesirable			somewhat desirable			highly desirable
		1	2	3	4	5	6	7
D1	Small or medium sized enterprise	☐	☐	☐	☐	☐	☐	☐
D2	Domestic multinational corporation	☐	☐	☐	☐	☐	☐	☐
D3	Foreign multinational corporation	☐	☐	☐	☐	☐	☐	☐
D4	Non-Profit-Organization	☐	☐	☐	☐	☐	☐	☐
D5	Government Agency	☐	☐	☐	☐	☐	☐	☐
D6	Self-employed	☐	☐	☐	☐	☐	☐	☐

In the following list you find some statements on launching a social enterprise or venture. Please indicate to which extent you agree or disagree with the following statements (ranging from 1 *"strongly disagree"* to 5 *"strongly agree"*)

		strongly disagree		neither agree nor disagree		strongly agree
		1	2	3	4	5
D7	I am interested in launching a social enterprise or venture that strives to advance positive social change.	☐	☐	☐	☐	☐
D8	I have considered launching a social enterprise or venture that strives to advance positive social change.	☐	☐	☐	☐	☐
D9	I am prepared to launch a social enterprise or venture that strives to advance positive social change.	☐	☐	☐	☐	☐
D10	I am going to try hard to launch a social enterprise or venture that strives to advance positive social change.	☐	☐	☐	☐	☐

D11 How soon are you likely to launch your social enterprise or venture that strives to advance positive social change?
☐ never
☐ after 10+ years
☐ within 6 – 10 years
☐ within 1 – 5 years
☐ within 1 year

Section E

Finally, for purposes of analysis we need some information regarding the respondents. Please answer the following nine questions:

E1   Are you?   ☐ Female   ☐ Male

E2   How old are you?   _____

E3   What is your citizenship?   _____

E4   What was your citizenship at birth?   _____

E5   In which study program are you currently enrolled?

    ☐ Bachelor

    ☐ Master, Diplom

    ☐ Other (please specify): _____

E6   What is your major? (Please mark only one box.)

    ☐ Management/Economics

    ☐ Arts and Social Sciences

    ☐ Engineering/Computer Sciences

    ☐ Natural Sciences

    ☐ Medicine

    ☐ Other (please specify): _____

E7   Have you participated in any (university) courses or trainings concerning corporate social responsibility, sustainability, environmental management, business ethics, or similar courses?

    ☐ Yes   ☐ No

    If yes, please specify: _____

E8   Have you spent a longer time continuously (a year or more) abroad?

    ☐ Yes   ☐ No

E9   How many years of work experience do you have (including apprenticeship, full-time job, internship, and part-time job with more than 10 hours per week)? _____ Years

Thank you for your participation in this research project!

If you have comments or remarks regarding this questionnaire, please use the back of this page for feedback. Thank you in advance. If you have any queries regarding the survey, please contact: Caterina Kausch (caterina.kausch@ovgu.de).

5 German Business Students' Attitudes toward Corporate Sustainability

After completing the multi-stage scale development process described in the previous chapter, the tested, and so far found to exhibit sound psychometric properties, CSA scale was applied in its first large scale study in Germany. The purpose of this study is threefold. First, further validation of the newly developed CSA scale is of peculiar interest and thus a large part of this chapter is devoted to it. Although pre-tests and the pilot study have provided first evidence for the psychometrically soundness of the scale, the small sample sizes did not allow for an exploratory factor analysis (EFA) or confirmatory factor analysis (CFA) - techniques that are frequently used in the construction of measurement scales that attempt to measure latent variables (Field, 2009, p. 628). Consequently, a thorough reliability and validity check of the CSA scale as part of this large scale study was undertaken, including EFA and CFA, to cross validate the psychometric properties. The second objective of the present study is to examine the relevance German business students attach to the three spheres of CS on the long-term success of corporations. Finally, the third objective is to test the hypothesized relationships stated in Chapter 3. By means of multiple regression analysis, the predictive power of individual cultural orientations and personal values on the three dimensions of corporate sustainability attitude were examined, controlling for age, gender, and CS course attendance. The chapter proceeds as follows: First, the data collection and sample characteristics are described. Thereafter, the applied measurement scales are explained and their psychometric properties are reported. Thereby, special focus is laid on the CSA scale. In the last subchapter, the analysis of the data and the results are described.

5.1 Sample and Data Collection

The first large scale study with the CSA scale was carried out at the Faculty of Management and Economics, University of Magdeburg, Germany in July 2011. In total, the German sample consisted of 361 questionnaires filled out by students enrolled in the economic and management study programs as well as conjunct study programs (e.g. industrial engineering, business informatics, and business mathematics). The questionnaires were administered during class time in the presence of a professor. The students were asked to voluntarily participate in the study by filling out the questionnaire. All questionnaires were collected directly after their completion.

The choice of sample was driven by two considerations. First, as mentioned at the beginning of the dissertation, the empirical studies in Chapter 5 and Chapter 6 were conducted with business students, because today's business students constitute tomorrow's business women and men. Hence, studying the attitudes of potential future entrepreneurs, managers and employees on the role of the three dimensions of CS on the long-term success of companies, in fact, will provide insights into the potential future direction of organizations. Second, given

that the German sample is part of a multi-country study (see Chapter 6), particularities of cross-cultural research had to be taken into account. Random sampling in cross-cultural studies makes it harder to compare results. In this case, it is not clear if the observed differences are grounded in cultural differences or non-controlled differences. Therefore, cross-cultural researchers are recommended to conduct research among similar groups in terms of background variables to ensure sample equivalence (Vijver & Leung, 1997, p. 30). For that reason, the study was carried out with a matched sample of university students in the field of management and economics or related study fields. This student sample allows the greatest variable control for differences concerning age, educational background, and working experience.

Careful and correct data cleaning is critical in advance of the data analysis. Consequently, questionnaires with incomplete data or evident answering patterns were removed. Regarding the CSA scale and CVSCALE, questionnaires were retained, if only a few items (< 10% of the scale) were missing in these scales. In this case, the means for the missing data were manually imputed using the mean-person approach as suggested by Roth, Switzer III, and Switzer (1999, p. 229). This approach entails imputation of the respondent's mean of that scale dimension to the missing value. For the Schwartz Value Survey, different data cleaning criteria, as suggested by Schwartz (1992), were applied. Accordingly, respondents were dropped if they either skipped 15 or more items of the 57-item SVS, checked the scale anchor "7" more than 21 times or all other scale anchors more than 35 times (pp. 18-20). In addition, if more than 30 percent of the items of one of the ten dimensions of the SVS were missing (e.g. if two of the three items for the *hedonism* dimension were blank), the questionnaire was excluded from the analysis. In order to avoid any bias owed to multicultural influences within one country, questionnaires from transnational students were discarded from the analysis. The described procedures reduced the number of usable questionnaires to 302, 145 (48.0%) of which were from females and 157 (52.0%) from male respondents. Table 5.1 summarizes the descriptive statistics of the German business student sample.

Table 5.1: Descriptive Statistics of the German Sample

Demographic data	Frequency (%)
Sample size	302
Mean age	22.64 (*SD*: 1.87)
Male	157 (52.0)
Female	145 (48.0)
Undergraduate	237 (78.5)
Business major	182 (60.3)
CS course attendance	58 (19.2)

Note: *SD* = standard deviation.

The age of the students ranged from 19 to 31 years, with 22.64 years (*SD* = 1.87) as the average age. Two hundred thirty-seven (78.5%) of the respondents were enrolled in undergraduate

programs (bachelor students), while the number of graduates (master or diploma students) amounted to 65 (21.5%). According to the data, 182 (60.1%) students majored in management and economics and 120 students indicated that they majored in related fields (e.g. industrial engineering).

5.2 Measurement Instruments

The questionnaire that was used for the present study contained five sections with overall 133 items. Besides the self-developed CSA scale, which constituted the Section A, the questionnaire included the following established measurement instruments: the CVSCALE (Yoo, Donthu, & Lenartowicz, 2011) to collect data on Hofstede's five cultural dimensions at the individual level and the Schwartz Value Survey (Schwartz, 1992) to assess personal values. Furthermore, questions on career preferences, social entrepreneurial intent (Prieto, 2010) and a final section on socio-demographic questions (age, gender, citizenship, study program, major, CS course attendance, etc) were included. A copy of the questionnaire is to be found in the Appendix of Chapter 4. The following subchapters will provide a detailed description of the measurement scales that were used for the subsequent empirical analyses.

5.2.1 CSA Scale

To measure respondents' attitudes toward the three-dimensions of corporate sustainability, the newly developed CSA scale was used. The CSA scale collects information on the three dependent variables *attitude toward corporate environmental sustainability*, *attitude toward corporate economic sustainability*, and *attitude toward corporate social sustainability*.[23] The respondents had to rate 30 items - 10 items for the economic, environmental, and social dimension respectively - on a seven-point Likert scale with 1 representing *"strongly disagree"*, 4 *"neither agree nor disagree"*, 7 *"strongly agree"*. The points 2, 3, 5 and 6 had no verbal anchor.

To investigate whether the CSA scale displays sound psychometric properties for the German sample a validation process that included the evaluation of content validity, convergent and discriminant validity, and internal consistency reliability, was undertaken. Literature provides a variety of reliability and validity criteria that give indication of how well a scale measures the construct under investigation (Bagozzi & Phillips, 1982; Bagozzi, Yi, & Phillips, 1991; Campbell and Fiske, 1959). While the pre-tests and the pilot study of the present scale validation process provided first evidence for content validity and internal consistency of the CSA scale, the large scale study in Germany was aimed at showing if these findings could be supported. In order to examine the dimensionality of the CSA scale, the responses to the 30 items

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[23] For the remainder of the dissertation, the abbreviations environmental CSA, economic CSA, and social CSA will be used when referring to the three dependent variables.

were first factor analyzed by means of principal component analysis (PCA), followed by a confirmatory factor analysis. In addition, several fit indices, including the χ^2/degrees of freedom ratio, the goodness of fit index (GFI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA), were used to test the model fit of the three-factor model proposed in the previous theoretical chapters. In addition, a combination of multiple reliability and validity measures, including Cronbach's coefficient alpha, average inter-item correlation, corrected-item total correlations, composite reliability, and average variance extracted, as well as the Fornell-Larcker criterion, were consulted to assess the reliability and convergent, as well as divergent, validity of each subscale. The analyses of the collected data were performed using SPSS 20.0 and AMOS 20.0.

5.2.1.1 Assumption Testing for Factor Analysis

Prior to the exploratory factor analysis of the CSA scale, it was tested whether required assumptions for the subsequent analyses were fulfilled. After data cleaning, the number of valid questionnaires ($n = 302$) was fairly good and met suggestions of minimum sample size and subject to item ratio for factor analysis. In fact, no clear rule of thumb exists with respect to an adequate sample size. Recommendations range from a minimum sample size of 100 (Gorsuch, 1983; Kline, 1979 as cited in MacCallum, Widaman, Zhang, & Hong, 1999) to a sample size that should exceed 200 (fair) respondents or even better 300 (good) respondents (Comrey & Lee, 1992 as cited in MacCallum et al., 1999). Instead of considering the minimum sample size, Everitt (1975) suggested a subject to item ratio of 10:1, i.e. 10 respondents for each item (p. 238). The present German sample of 302 respondents meets both the minimum sample size recommendation of Comrey and Lee (1992) and the subject to item ration of 10:1, considering the 30-item CSA scale. Another basic requirement for factor analysis is the measurement of the latent variable at an interval level. In accordance with common practice in empirical studies, the data, which was collected with Likert scales, was treated as interval data, assuming equidistance between the response points.

Although exploratory factor analysis is considered robust to minor violations of assumptions of normal distribution, the distribution of the data was investigated. The Kolmogorov-Smirnov test and Shapiro-Wilk test were both significant ($p < .001$), thus, indicating non-normal distribution of the 30 items[24]. Corresponding histograms, values for skewness (ranging from -2.21 to -.16), and values for kurtosis (ranging from -.71 to 7.30) also provided evidence for the likelihood of non-normal distribution of the items (Bühner, 2004, pp. 75-78). All items had negative values of skewness, indicating too many high scores and thus a negatively skewed distribution (Field, 2009, p. 139). This is not surprising since the respondents on average evaluated the items above the midpoint. Twenty-one of the thirty items exhibited positive values of kurtosis, while nine items had values of kurtosis slightly below zero. The

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[24] Significance can, however, also be due to the large sample size.

high amount of positive values of kurtosis is a sign of a *"pointy and heavy-tailed distribution"* (Field, 2009, p. 139). Significance tests of skew and kurtosis were not carried out due to the large sample size (Field, 2009, p. 139).

The factorability of the 30 items of the CSA scale was, furthermore, tested by means of several well-acknowledged criteria. The first criterion used was the correlation matrix of the thirty items of the CSA scale. Both the Pearson and Spearman's correlation coefficients - the latter being a non-parametric measure and, therefore, more suitable for the collected CSA data - were calculated. Reasonable factorability of items is assumed if items correlate to some extent, but not perfectly; following Field (2009) the thresholds are > .30 and < .90 (p. 657). Accordingly, the two correlation matrices were scanned for correlations greater than .30 and smaller than .90. Table 5.15 in the Appendix of Chapter 5 presents the pairwise correlations among the 30 items. Examining the Spearman's rank correlation coefficients, five of the 30 items (1, 12, 14(R), 19(R), 30(R))[25] did not correlate with any other item above the threshold of .30. Furthermore, item 2, 5(R), and 11(R) only showed one correlation above the .30 threshold with another item. None of the item correlations exceeded .90. Looking at the Pearson's correlation coefficients, four of the 30 items (5(R), 12, 14(R), 19(R)) did not correlate with any other item above the threshold of .30 and item 11(R), 20, 27(R) and 30(R) only correlated with one or two items above the .30 threshold. Additionally, none of the item correlations exceeded .90. These findings are in accord with the pre-test and pilot study results that similarly revealed problems with some of the negatively worded items, namely items 5(R), 11(R), 14(R), 19(R), and 30(R).

The determinant of the resulting correlation matrix was .000017, which is slightly bigger than the necessary value of 0.00001; indicating that multicollinearity should not be a problem (Field, 2009, p. 660). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy equaled .85, which is well above the recommended value of .50 (Kaiser, 1974). The diagonal of the anti-image correlation matrix was screened for the KMO values all items in the exploratory factor analysis. Bartlett's test of sphericity ($\chi^2_{(435)} = 3192.51$, $p < .001$) was highly significant showing that correlations between items were sufficiently large for factor analysis. Bartlett's test of sphericity, however, assumes normal distribution, which is not the case here. Furthermore, as with any significant test, significance may also be attributed to the large sample size (Field, 2009, p. 647). Lastly, the communalities ranged between .40 and .70, with the exception of item 14(R) and 30(R), further confirming that most of the items shared some common variance with other items. Taken together, preliminary analysis supported factorabil-

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[25] The item numbers refer to the item order in the final questionnaire. See Table 4.3 in the Appendix of Chapter 4 for an overview of the item numbers. R stands for reversed items.

ity of the data to a great extent, apart from the evident problems with some of the negatively worded items.[26]

5.2.1.2 Exploratory Factor Analysis

In the initial exploratory factor analysis all 30 items of the developed CSA scale were included. Following the procedures applied in studies that attempted to measure related constructs, such as the four dimensional construct of CSRO or the three-dimensional PRESOR scale (see e.g. Aldag & Jackson, 1984; Shafer et al., 2007; Singhapakdi et al., 1996; Turker, 2009), we conducted a principal component analysis. Although PCA is not considered an exploratory factor procedure in the conventional sense, the 30 items of the suggested CSA scale were factor analyzed using PCA because it is well suited for data reduction. Moreover, according to Field (2009), PCA is considered a psychometrically sound procedure (p. 638). Concerning the number of factors to be extracted, both the Kaiser's criterion and the scree test were consulted. Although the Kaiser's criterion is the most commonly applied rule for factor retention (eigenvalues > 1), it is found to frequently overestimate the number of factors to retain (Zwick & Velicer, 1986, p. 439) and may not yield accurate results if the average communality is smaller than .60 (Field, 2009, p. 662). Consequently, the scree test complemented the Kaiser's criterion and was used to identify a point of reference on the appropriate number of factors to be rotated. Indeed, looking at the scree plot (see Figure 5.1) revealed a different factor solution than the Kaiser's criterion. While the Kaiser's criterion suggested to retain six factors with eigenvalues above 1, the scree plot tailed off after three factors, indicating the study should retain three factors instead of six - a suggestion which would be in line with the theoretical considerations of a three dimensional construct of CS.[27]

Figure 5.1: Scree Plot 30-Item CSA Scale
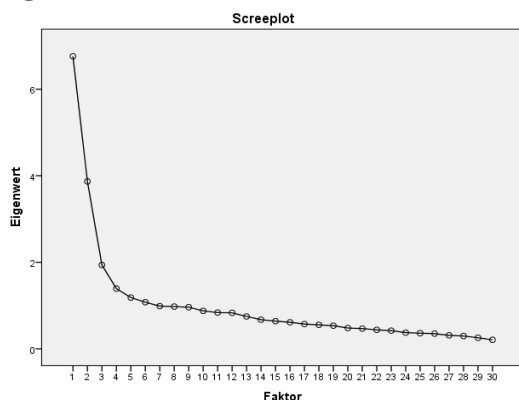
Source: SPSS output.

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[26] The scores of the negatively worded items were, of course, inverted after data entry. The following formula was applied to recode the reverse scored items: $recode(x) = max(x) + 1 - reverse(x)$.

[27] There exist also a number of more advanced techniques to determine the number of factors, e.g. parallel analysis or the minimum average partial test (Bühner, 2004, pp. 162-163). However, the extraction of factors was here mainly driven by the prior specified theoretical structure. Hence, the tests employed were limited to the scree test and Kaiser's criterion.

Employing for the time being the conservative Kaiser's criterion, the initial PCA with varimax rotation resulted in six factors with eigenvalues above 1, with the first factor explaining 17 percent of the variance, the second factor 12.5 percent of the variance, and the third factor 7.5 percent of the variance. Factor four, five and six had eigenvalues of slightly above one, each factor explaining between 4.5 and 7.5 percent of the variance. In total, the combination explained 54 percent of variance. Table 5.2 presents the factor loadings resulting from the PCA with varimax rotation based on the eigenvalue criterion.

Table 5.2: Rotated Component Matrix of Initial 30-Item CSA Scale

No.	Items	Components					
		1	2	3	4	5	6
29	increase the use of regenerative energy sources.	.81					
22	invest in "cleaner" technology.	.79					
16	redesign and re-engineer products and services to make them more environmentally friendly.	.79					
26	establish effective recycling and reuse systems.	.74					
9	foster programs to track and reduce its emissions.	.71					
13	have factory programs to conserve water and energy.	.64					
3	implement programs to minimize the negative impact of organizational activities on the natural environment.	.56			.53		
17	implement strategies to manage the health of employees.	.54					
5(R)	deplete non-renewable resources (e.g. fossil fuels).						
28	control the production costs strictly.		.73				
25	be concerned with improving economic performance.		.72				
10(R)	disregard profit-maximization.		.65				
8	pursue opportunities that provide the best rate of return.		.63				
6	efficiently produce goods and services.		.61				
20	control employees' productivity.		.59				
30(R)	treat product pricing as an issue of subordinate importance.		.48				
18	invest in research and development.		.45				
24	support employees' lifelong learning by trainings and education.		.41				
27(R)	provide wages below market standards.			.62			
14(R)	concentrate on maximizing the short-term returns.			.61			
23(R)	accept the damage to natural habitats caused by the organization's activities.	.40		.55			
19(R)	strive for uniformity of its workforce in terms of age, gender, and race.			.53			
11(R)	also proceed with activities for which environmental risks can only be incompletely evaluated and controlled.			.53			
4	take precautionary measures to ensure the safety of employees.				.71		
1	establish a co-operative organizational culture.				.61		
2	maintain a strong competitive position in its industry.		.43		.51		
21	implement internal policies that ensure equal opportunities in employees' promotion.						
12	implement flexible work time policies for its employees.					.77	
15	help solve societal problems.	.47					.58
7(R)	ignore community service and charities.						.52

Note: German sample $n = 302$. Extraction method: Principal component analysis. Rotation method: Varimax with Kaiser-normalization. Rotation converged in 10 iterations. Factor loadings < .40 are suppressed. Items have been sorted by loadings on each factor. Overall measure of sampling adequacy (KMO measure): .85. Bartlett's test of sphericity $\chi^2_{(435)} = 3192.51$, $p < .001$.

Component 1 and component 2 can be interpreted as the environmental and economic dimension of CSA respectively. Concerning component 1, all of the items that substantially loaded on this component (factor loadings above .50), with the exception of item 17, were designed for the environmental CSA subscale. However, problems were encountered in regards to item 3, which shows extensive cross-loadings with the fourth component. Furthermore, the negatively worded items 5(R), 11(R) and 23(R), which were initially designed for the environmental dimension of the scale, did not load on the first component. Ten items loaded on to component 2 with only one item (item 24 with a factor loading = .41) not being designed for the respective economic dimension, but for the social dimension. The items of component 3 were not consistent with the proposed theoretical model. Corresponding with insights from previous studies that conducted factor analysis on scales with positively and negatively worded items (see e.g. Kelloway, Loughlin, Barling, & Nault, 2002; Wong, Rindfleisch, & Burroughs, 2003), the factor analysis resulted in a weak factor (*method factor*) of negatively worded items. Five negatively worded items, namely items 27(R), 14(R), 23(R), 19(R), 11(R), loaded on to component 3 regardless of their initially theoretically intended dimension. These items were found earlier to not, or only marginally, correlate with any other item (see Table 5.15 in the Appendix of Chapter 5). In fact, using negatively and positively formulated items may influence the factor structure (Bühner, 2004, p. 62). Without wanting to leap conclusions, component 3 very likely emerged due to the common reversed nature of the items and not because of content-related similarities. Finally, components 4, 5 and 6 contained items that were theoretically intended to form the social subscale, except for item 2.

According to the results of the initial 30-item exploratory factor analysis, there was an evident problem with respect to some of the negatively formulated items. This was also supported by the preceding analysis of the correlation matrix. Further scale purification was, therefore, carried out as follows: In the first step, all items that did not correlate with any other items, according to both the Pearson's correlation coefficients and Spearman's rho, were excluded, namely items 5(R), 11(R), 12, 14(R), 19(R), 30(R). The remaining 24 items were factor analyzed using PCA. As shown in Table 5.3, this analysis resulted in five factors with eigenvalues above 1, with the first factor explaining 19 percent of the variance, the second factor 15 percent of the variance, and the third factor 8.5 percent of the variance. The fourth and fifth factors had eigenvalues of slightly above one, each factor explaining seven percent of the variance. In total, the combination explained 57 percent of variance. The rotated component matrix revealed some weakly- or cross-loaded items, namely items 3, 20, 24, 2, 15, and 23(R).

Table 5.3: Rotated Component Matrix of 24-Item CSA Scale

No.	Items		Components			
		1	2	3	4	5
22	invest in "cleaner" technology.	.80				
29	increase the use of regenerative energy sources.	.78				
16	redesign and re-engineer products and services to make them more environmentally friendly.	.78				
26	establish effective recycling and reuse systems.	.75				
9	foster programs to track and reduce its emissions.	.70				
13	have factory programs to conserve water and energy.	.65				
3	implement programs to minimize the negative impact of organizational activities on the natural environment.	.55		.52		
17	implement strategies to manage the health of employees.	.54				
25	be concerned with improving economic performance.		.76			
28	control the production costs strictly.		.74			
6	efficiently produce goods and services.		.64			
10(R)	disregard profit-maximization. *(reverse coded)*		.63			
8	pursue opportunities that provide the best rate of return.		.61			
20	control employees' productivity.		.56			-.53
18	invest in research and development.		.51			
24	support employees' lifelong learning by trainings and education.		.47			.41
4	take precautionary measures to ensure the safety of employees.			.67		
1	establish a co-operative organizational culture.			.63		
2	maintain a strong competitive position in its industry.		.40	.58		
7(R)	ignore community service and charities. *(reverse coded)*				.72	
15	help solve societal problems.	.41			.62	
23(R)	accept the damage to natural habitats caused by the organization's activities. *(reverse coded)*				.45	.42
21	implement internal policies that ensure equal opportunities in employees' promotion.				.40	
27(R)	provide wages below market standards. *(reverse coded)*					.79

Note: German sample $n = 302$. Extraction method: Principal component analysis. Rotation method: Varimax with Kaiser-normalization. Rotation converged in 8 iterations. Factor loadings $< .40$ are suppressed. Items have been sorted by loadings on each factor. Overall measure of sampling adequacy (KMO measure): .86. Bartlett's test of sphericity $\chi^2_{(276)} = 2753.77$, $p < .001$.

Based on the 24-item matrix, careful step-by-step elimination of weakly- or cross-loaded items was conducted. Items loading above .40 on a single factor were selected for inclusion in the corresponding subscales. As pointed out by Rossiter (2002), the establishment of content and construct validity[28] in the scale development process should not be solely informed by conventional statistical procedures, such as factor analysis and internal consistency reliabilities, but instead rely more heavily on content-related considerations and expert feedback to ensure that conceptually important items are not discarded in order to reach the suggested reliability and validity cut-off points (pp. 305-308). This dissertation would not go so far as to say that one can abstain from traditional scale purification methods. However, combining conventional statistical analysis to establish validity and reliability while bearing in mind the initial notion of the construct that should be represented by a multi-item scale, without doubt, allows for a better scale. Hence, besides evaluating the factor loadings and psychometric

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[28] According to Rossiter, content validity equals construct validity (Rossiter, 2008, p. 380; Rossiter, 2002, p. 311).

properties of the subscales, it was verified whether the remaining items conceptually belonged with the subscale. Eventually, this purification process resulted in the final CSA scale - a 16-item scale of three distinct components that together explained 57 percent of the total variance (component 1 = 24%; component 2 = 18%; component 3 = 15%). The results of the factorability criteria of the remaining 16 items, including the KMO measure of sampling adequacy (= .87) and Bartlett's test of sphericity ($\chi^2_{(120)}$ = 1790.80, p < .001), supported the factorability of the 16 remaining items. Table 5.4 reports the final component loadings and communalities after varimax rotation using the Kaiser criterion. As can be seen in Figure 5.2, the scree plot strongly supports a three-component solution.

Table 5.4: Rotated Component Matrix of Final 16-Item CSA Scale

No.	Items	Components			Communalities
		1	2	3	
22	invest in "cleaner" technology.	.82			.68
29	increase the use of regenerative energy sources.	.82			.69
26	establish effective recycling and reuse systems.	.77			.62
16	redesign and re-engineer products and services to make them more environmentally friendly.	.76			.65
9	foster programs to track and reduce its emissions.	.70			.53
13	have factory programs to conserve water and energy.	.68			.54
25	be concerned with improving economic performance.		.77		.64
8	pursue opportunities that provide the best rate of return.		.74		.56
28	control the production costs strictly.		.71		.50
10(R)	disregard profit-maximization. *(reverse coded)*		.69		.51
6	efficiently produce goods and services.		.68		.60
4	take precautionary measures to ensure the safety of employees.			.71	.56
21	implement internal policies that ensure equal opportunities in employees' promotion.			.66	.50
1	establish a co-operative organizational culture.			.64	.46
17	implement strategies to manage the health of employees.	.44		.63	.57
24	support employees' lifelong learning by trainings and education.			.41	.41

Note: German sample n = 302. Extraction method: Principal component analysis. Rotation method: Varimax with Kaiser-normalization. Rotation converged in 5 iterations. Factor loadings < .40 are suppressed. Items have been sorted by loadings on each factor. Overall measure of sampling adequacy (KMO measure): .87. Bartlett's test of sphericity $\chi^2_{(120)}$ = 1790.80, p < .001.

Figure 5.2: Scree Plot 16-Item CSA Scale
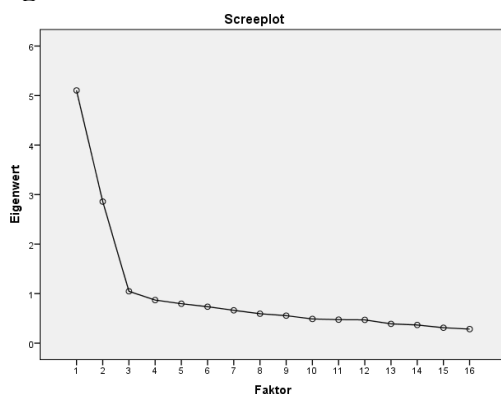
Source: SPSS output.

As shown in Table 5.4, all items loaded substantially (> .40) on the theoretically assumed factors, and none of the items, except for item 17, loaded on more than one factor, supporting the theoretically derived three-dimensional structure of the CSA scale. Specifically, component 1 can be interpreted as the environmental dimension, component 2 reflects the economic dimension and component 3 displays the social dimension of the CSA scale. While component loadings for the environmental and economic dimensions are considered to be good, there remain some problems with respect to the social dimension. Despite the cross-loading of item 17 on component 1, this item was retained. A difference of loadings between component 1 and 3 of almost .20 appears to justify the inclusion of the item in component 3.

In addition to the PCA, principal axis factoring and different oblique rotations (e.g. promax, oblimin) were carried out to see if the results resemble the factor structure obtained from the PCA. Applying principal axis factoring in combination with promax and oblimin rotations brought forth similar factor patterns as the PCA with orthogonal rotation (varimax). In conclusion, the results of the exploratory factor analysis provide preliminary support for the discriminant and convergent validity of the three CSA subscales.

5.2.1.3   *Confirmatory Factor Analysis*

Subsequently, a confirmatory factor analysis was performed to cross-validate the three-dimensional structure of the CSA scale derived from the exploratory factor analysis. The measurement model was based on the factor patterns obtained from the exploratory factor analysis. The maximum likelihood method was applied using AMOS 20.0. As pointed out by Byrne (2001), the maximum likelihood method requires multivariate normal distribution (pp. 267-268). However, according to several studies (see e.g. McDonald & Ho, 2002, pp. 69-70; Olsson, Foss, Troye, & Howell, 2000, pp. 577-578), the method is quite robust against non-normal distribution. Table 5.5 presents the results of the CFA. The CFA demonstrated adequate convergent validity of the items, with all items loading on their corresponding dimension as determined by the preceding exploratory factor analysis. Moreover, all factor loadings were significant ($p < 0.001$).

Following Byrne (2001), the overall model fit was evaluated in terms of several fit indices, including the χ^2/degrees of freedom ratio, goodness of fit index (GFI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). GFI and CFI values of .90 or above are considered indicative of good fit (pp. 82-83). A general accepted threshold for the RMSEA is < .08 (Browne & Cudeck, 1993, p. 144) and $\chi^2/df < 3$ (Homburg & Giering, 1996, p. 13) are considered to be good fit. As shown in the first row of Table 5.6, the three-factor measurement model demonstrated adequate overall fit with $\chi^2_{(101)} = 237.285$, $\chi^2/df = 2.35$, GFI = .91, CFI = .92, and RMSEA = .067. The fit indices support the validity of the proposed theoretical model from Chapter 3, implying that the covariance between the

CSA scale items can be accounted for by a three-factor model in which each factor constitutes one dimension of the proposed conceptualization of CSA, including the three distinct, yet somehow related, dimensions of economic CSA, environmental CSA, and social CSA. Each subscale is hence reflective only of a single CSA dimension. Despite the good model fit, different possible competing models were also tested on the items subsequent to the assessment of the three-dimensional model. As pointed out by Jöreskog and Sörbom (1993), *"if the model fits the data, it does not mean that it is the correct model or even the 'best' model. In fact, there can be many equivalent models all of which will fit the data equally well as judged by any goodness of fit measures"* (p. 114). Bühner (2004) further stated that one should always bear in mind theoretical, as well as logical considerations, when evaluating the goodness of fit of a model (p. 202). This evaluation of fit should include comparisons with competing models. Table 5.6 on the following page reports the fit indices of the following five competing models: the above discussed three-factor model including an economic, environmental, and social factor, a two-factor model that consists of an economic dimension and a combined social/environmental dimension, a one-factor model wherein all items could be accounted for by a single corporate sustainability dimension, a second-order model with economic, social, and environmental sustainability as sub dimensions of corporate sustainability, and a null model/independence model. As shown in Table 5.6, all of the possibly equivalent models exhibited a worse model fit than the proposed three-factor model.

Table 5.5: Confirmatory Factor Analysis of the 16-Item CSA Scale

Constructs and items	Factor loadings
Environmental CSA	
29 increase the use of regenerative energy sources.	.80
22 invest in "cleaner" technology.	.77
16 redesign and re-engineer products and services to make them more environmentally friendly.	.76
26 establish effective recycling and reuse systems.	.72
9 foster programs to track and reduce its emissions.	.67
13 have factory programs to conserve water and energy.	.66
Economic CSA	
25 be concerned with improving economic performance.	.75
6 efficiently produce goods and services.	.73
8 pursue opportunities that provide the best rate of return.	.62
10(R) disregard profit-maximization. *(reverse coded)*	.61
28 control the production costs strictly.	.57
Social CSA	
17 implement strategies to manage the health of employees.	.68
4 take precautionary measures to ensure the safety of employees.	.63
24 support employees' lifelong learning by trainings and education.	.57
21 implement internal policies that ensure equal opportunities in employees' promotion.	.55
1 establish a co-operative organizational culture.	.49

Note: German sample $n = 302$. Factor loadings are standardized and significant ($p < 0.001$).

Table 5.6: Fit Indices of Competing Measurement Models of the 16-Item CSA Scale

Model	χ^2	df	χ^2/df	GFI	CFI	RMSEA
Three-Factor Model	237.29***	101	2.35	.91	.92	.067
Two-Factor Model	397.26***	103	3.86	.84	.83	.100
One-Factor Model	751.48***	104	7.23	.67	.62	.144
Second-order model[29]	-	-	-	-	-	-
Null model	1828.25***	120	15.24	.41	.00	.217

Note: German sample n = 302, *** p < .001, χ^2 = Chi-square, df = degrees of freedom, CFI = comparative fit index, GFI = goodness of fit index, RMSEA = root mean square error of approximation.

5.2.1.4   *Validity and Reliability of the Three-Factor Model*

Subsequent to the CFA, the internal consistency reliability was tested for each derived sub-scale of the three-factor model. A summary of the reliability and validity estimates is provided in Table 5.7. The Cronbach's alpha coefficients for the three subscales ranged from .72 for the social CSA subscale and .79 for the economic CSA subscale to .87 for the environmental CSA subscale. These coefficients indicate good internal consistency of the items in each subscale and, thus, it can be inferred that the items reliably measure the latent constructs (Nunnally, 1978, p. 245). The respective alpha score was already the highest for each subscale when consulting the criterion Cronbach's alpha if-item-deleted in the SPSS output. Hence, deleting any of the items would have not resulted in an improved internal consistency of the subscales. Furthermore, the inter-item correlations and corrected item-total correlations were analyzed. As mentioned in Chapter 4, Cronbach's alpha and the inter-item correlations are used to assess the reliability of the entire scale, whereas the item-total correlation and Cronbach's alpha if-item-deleted are used to detect problems with single items that might not fit into the scale. The suggested threshold of the inter-item correlation of .30 (Robinson, Shaver, & Wrigthsman, 1991, p. 13) and .50 for the corrected-item-total correlations (Zaichkowsky, 1985, p. 343) were met by all three subscales. The average IIC of the economic CSA subscale was .43, with all items (6, 8, 25, 28, 10(R)) showing corrected item-total correlations above .50. The mean IIC for the environmental CSA subscale equaled .53 and for the social CSA subscale it was .34. The corrected item-total correlations for the items of the environmental dimension were all above .60. Solely in the social dimension, two items (21, 24) fell slightly below the recommended threshold of .50.

In the past, Cronbach's alpha and the inter-item correlation were generally accepted measures to evaluate the internal consistency of a scale. Despite their widespread use, other reliability measures, such as the composite reliability (ρ_c) (Bagozzi & Yi, 1988; Fornell & Larcker, 1981), are considered to be superior to Cronbach's alpha. The composite reliability measure does not assume that indicators are equally weighted, but rather takes into account the respective factor loadings of each item. In fact, the restrictive assumption of Cronbach's alpha with

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[29] Heywood case.

respect to the equal importance of all indicators may lead to a bias. In contrast to the already reported measures, SPSS or AMOS do not provide figures on the composite reliability. Instead, the composite reliability has to be computed manually applying the following formula (Fornell & Larcker, 1981, p. 45):

$$\rho_c = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum Var(\varepsilon_i)} \tag{5.1}$$

with:
λ_i standardized loading of the indicators
$Var(\varepsilon_i)$ variance due to random measurement error for each loading $(= 1 - \lambda_i^2)$

The calculated composite reliability estimates for the three CSA subscales were good for the environmental sustainability scale ($\rho_c = .86$) and economic sustainability ($\rho_c = .79$), and still acceptable for social sustainability ($\rho_c = .65$). Generally, a composite reliability estimate of at least .60 or higher is thought to be indicative of a reliable scale (Bagozzi & Yi, 1988, p. 82). Overall, Cronbach's alpha and the composite reliability testified good internal consistency of the three CSA subscales. In order to assess convergent and discriminant validity of the subscales, the average variance extracted (AVE) was calculated (Fornell & Larcker, 1981, p. 46):

$$AVE = \frac{\sum \lambda_i^2}{\sum \lambda_i^2 + \sum Var(\varepsilon_i)} \tag{5.2}$$

with:
λ_i standardized loading of the indicators
$Var(\varepsilon_i)$ variance due to random measurement error for each loading $(= 1 - \lambda_i^2)$

The computed AVE estimates for the economic and social CSA subscale with values below .50 did not meet the suggested threshold of the AVE, according to which values above .50 are considered to provide evidence for convergent validity (Fornell & Larker, 1981, p. 46). Only the environmental CSA subscale reached an AVE estimate above .50. The AVE of the environmental and social CSA subscales were .44 and .35 respectively. To test for discriminant validity, the Fornell-Larcker criterion was used. This criterion implies that the average variance extracted should be larger than the latent variable's squared correlation (=shared variance) with any of the other latent variables (Fornell & Larcker, 1981, p. 46). The squared correlations were .28 for the environmental/social dimension, .18 for the economic/social dimension, and .01 for the environmental/economic dimension. Concluding, the criterion for discriminant validity was fulfilled.

Table 5.7: Reliability and Validity of the CSA Subscales

Subscale	1	2	3	α	ρ_c	IIC
Environmental CSA	.54			.87	.86	.53
Economic CSA	.01	.44		.79	.79	.43
Social CSA	.28	.18	.35	.72	.65	.34

Note: German sample $n = 302$. Values in the main diagonal are the average variance extracted (AVE) for each dimension, values below are squared correlations between the subscales. α = Cronbach's alpha. ρ_c = composite reliability. IIC = inter-item correlations.

Literature recommends a variety of other validity criteria, including, for example, criterion validity (concurrent and predictive validity). The dissertation refrained from assessing criterion validity, as this requires an external criterion. That is, in order to assess how well the CSA scale performs with respect to predictive validity, we would need to collect data on the actual sustainable behavior of the business students and compare it to their survey results. Certainly, future research should approach collecting data on both by means of a longitudinal study. Furthermore, a multitrait-multimethod analysis to explore discriminant and convergent validity was not carried out. The multitrait-multimethod approach (Campbell & Fiske, 1959) requires the measurement of the construct through two different methods (e.g. questionnaire and observations) as well as the comparison of two related traits/constructs (e.g. attitude toward CS and CSR orientation). However, when comparing the degree of convergence and discrimination of the CSA scale to other existing scales, the validity of that existing metric might be insufficient, thus leading to inaccurate results (Bühner, 2004, p. 32). This is in line with Rossiter (2008), who pointed out that *"a construct's construct validity must be established independently of other constructs"* (p. 380). Instead, the evaluation of convergent and discriminant validity of each of the three subscales was accounted for by the different procedures described in the subchapters above.

Concluding, the psychometric properties of the self-developed CSA scale have been rigorously investigated. Explorative and confirmative factor analysis both supported the existence of three subscales. The internal consistency measures for each of the three subscales, as well as the fit indices, provided evidence of mostly good reliability and validity. The investigation showed that the environmental and economic CSA subscales exhibit sound reliability and validity. In comparison, the heterogeneity of items developed for the social dimension made it difficult to adequately validate this subscale. However, findings from other studies emphasized the broad scope of social sustainability issues, including a variety of external and internal aspects (see e.g. Chapple & Moon, 2005; Fortainer, Kolk, & Pinske, 2011, p. 673). In fact, the social dimension of the CSA scale is intended to reflect a broad spectrum of corporate social sustainability. In line with suggestions from Rossiter (2002, 2008), minor problems with psychometric properties were deliberately accepted as a necessary trade-off for content validity. Overall, the resulting CSA scale provides a means for examining attitudes toward the three dimensions of corporate sustainability. For the subsequent analyses in Chapter 5.3, the

final 16-item CSA scale was applied, comprising six items for the environmental CSA, 5 items for the economic CSA, and five items for the social CSA.

5.2.2 Individual Cultural Values Scale

The independent variable *individual cultural orientation* was measured with Yoo et al.'s (2011) CVSCALE (Individual Cultural Values Scale). In the past, most researchers, who examined the effect of culture on various outcome variables, have either relied on country scores, which can be found in Hofstede's books and on his website, or they have used the Value Survey Module - Hofstede's renowned measurement instrument - to collect primary data. Hofstede consistently emphasizes that the Value Survey Module is not intended to examine individual differences, as it was initially developed with the objective to analyze cultural differences at the group and country level, rather than at the individual level (Hofstede, 2001, p. 463). In spite of Hofstede's advice, the Value Survey Module has been frequently applied for individual level analysis in the past (Kirkman, Lowe, & Gibson, 2006, p. 288, pp. 311-312). Based on these considerations, the dissertation neither did make use of reported country scores from Hofstede's website nor applied the Value Survey Module to collect primary data. Instead, the CVSCALE was employed (Yoo et al., 2011). The CVSCALE has the advantage that it has been specially developed to assess the five Hofstede's dimensions at the individual level by collecting information on respondents' personal opinion on work- and life related values. Collecting primary data also has further advantages. Given that cultural values may change over time, the country scores on Hofstede's website and in his books, are not only outdated, they have another shortcoming. As argued by several authors (see e.g. Au, 1999; Sharma, 2010, p. 787; Spector, Cooper and Sparks, 2001, p. 279; Taras et al., 2010, pp. 409-410), the range of cultural values may not be constrained by geographic borders, due to the fact that individuals with the same nationality and same cultural background may possess heterogeneous cultural value systems. The last insight allows drawing the following conclusions: First, collecting individual data instead of taking reported national scores helps to avoid stereotyping. Second, if cultural values vary within one country, it is worthwhile to investigate personal cultural orientations within mono-cultural studies.

The applied 26-item CVSCALE captures the five Hofstede dimensions of power distance (5 items, e.g. *"People in lower positions should not disagree with decisions by people in higher positions."*), collectivism (6 items, e.g. *"Individuals should sacrifice self-interest for the group."*), masculinity (4 items, e.g. *"It is more important for men to have a professional career than it is for women."*), uncertainty avoidance (5 items, e.g. *"It is important to closely follow instructions and procedures."*), and long-term orientation (6 items, e.g. *"Working hard for success in the future"*). Hofstede et al. (2010) recently identified a sixth cultural dimension labeled indulgence versus restraint, which was not incorporated in the present scale. The CVSCALE constituted Section B in the questionnaire. To allow for more variance in the re-

sponses, we changed the original five-point Likert scale to a seven-point Likert scale, with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) for the dimensions of collectivism, uncertainty avoidance, power distance, and masculinity. In line with the original CVSCALE, the items for the dimension long-term orientation were anchored from *"very unimportant"* to *"very important"* on a seven-point scale.

The factor structure of the CVSCALE was assessed through a principal component analysis with varimax rotation. The PCA corroborated the theoretical structure of the CVSCALE, resulting in five factors that explained 50.48 percent of the overall variance. The KMO measure of sampling adequacy was .785, and thus above the recommended threshold of .60, while the Bartlett's test of sphericity ($\chi^2_{(325)} = 2134.32$) was significant at p < .001, indicating that the sample was suitable for factor analysis. Subsequently, a confirmatory factor analysis was carried out to ascertain the soundness of the scale. Table 5.8 reports the items, respective factor loadings obtained from the CFA, multiple reliability and validity measures, and fit indices of the five-factor model. The majority of the factor loadings, Cronbach's alpha, inter-item correlations, composite reliability, and fit indices displayed adequate reliability and validity in measuring Hofstede's cultural values at the individual level, and were comparable to the results of Yoo et al. (2011). Solely the average variance extracted fell short of the required threshold of .50. Furthermore, some of the factor loadings were quite low (e.g. item 3, 23, and 25)

Table 5.8: Confirmatory Factor Analysis of the CVSCALE

Constructs and items	Factor loadings
Fit Indices of the Five-Factor Model	
$\chi^2_{(289)} = 493.02^{***}$ $\chi^2/df = 1.71$ GFI = .89 CFI = .89 RMSEA = .048	
Power Distance ($\alpha = .72$, , IIC = .34, $\rho_c = .72$, AVE = .34)	
5 People in higher positions should not ask the opinions of people in lower positions too frequently.	.67
1 People in higher positions should make most decisions without consulting people in lower positions.	.62
19 People in higher positions should not delegate important tasks to people in lower positions.	.59
14 People in lower positions should not disagree with decisions by people in higher positions.	.54
12 People in higher positions should avoid social interaction with people in lower positions.	.50
Collectivism ($\alpha = .79$, IIC = .39, $\rho_c = .80$, AVE = .40)	
13 Group success is more important than individual success.	.75
16 Individuals should sacrifice self-interest for the group.	.68
15 Group loyalty should be encouraged even if individual goals suffer.	.67
4 Group welfare is more important than individual rewards.	.60
10 Individuals should only pursue their goals after considering the welfare of the group.	.56
18 Individuals should stick with the group even through difficulties.	.49
Masculinity ($\alpha = .72$, , IIC = .41, $\rho_c = .73$, AVE = .41)	
18 Solving difficult problems usually requires an active, forcible approach, which is typical of men.	.71
6 Men usually solve problems with logical analysis; women usually solve problems with intuition.	.65
2 It is more important for men to have a professional career than it is for women.	.63
20 There are some jobs that a man can always do better than a woman.	.56

Constructs and items	Factor loadings
Uncertainty Avoidance (α = .76, , IIC = .41, ρ_c = .79, AVE = .44)	
11 Instructions for operations are important.	.82
9 Rules and regulations are important because they inform me of what is expected of me.	.80
7 It is important to closely follow instructions and procedures.	.66
17 It is important to have instructions spelled out in detail so that I always know what I'm expected to do.	.52
3 Standardized work procedures are helpful.	.42
Long-Term Orientation (α = .67, IIC = .26, ρ_c = .68, AVE = .27)	
26 Working hard for success in the future	.65
22 Going on resolutely in spite of opposition (Persistence)	.62
24 Long-term planning	.52
21 Careful management of money (Thrift)	.48
23 Personal steadiness and stability	.43
25 Giving up today's fun for success in the future	.37

Note: German sample (n = 302). Factor loadings are standardized and significant ($p < 0.001$). *** $p < .001$. α = Cronbach's alpha, IIC = inter-item correlation, ρ_c = composite reliability, AVE = average variance extracted. χ^2 = Chi-square, df = degrees of freedom, CFI = comparative fit index, GFI = goodness of fit index, RMSEA = root mean square error of approximation.

5.2.3   Schwartz Value Survey

The third section of the employed questionnaire contained the Schwartz Value Survey. The SVS collects data on respondents' personal values, operationalizing the Schwartz's personal value typology introduced in Chapter 3.2.2 (Schwartz, 1992, 2006, 2009). It is one of the most widely recognized measurement instruments in personal value research and has found broad application in various empirical studies that investigated the link between underlying values, attitudes and behavior (Agle & Caldwell, 1999; Fischer, Vauclair, Fontaine, & Schwartz, 2010). The SVS is composed of two lists of value items, with the first list containing 30 items (terminal values) and the second list consisting of 27 items (instrumental values). The distinction between the two sets of personal values goes back to Rokeach (1973), according to whom terminal values and instrumental values function differently. The 57 items represent ten basic personal values (see Chapter 3.2.2). While the first 30 items are nouns that represent *"potentially desirable end-states"*, the second value list contains 27 adjectives that express *"potentially desirable ways of acting"* (Schwartz, 2006, pp. 11-12). In addition to the noun or adjective, an explanatory phrase in parentheses follows in order to further explain the meaning of the item, e.g. item 17 reads as follows: *"A WORLD AT PEACE (free of war and conflict)"*. It should be noted that Schwartz (1992) did not find support for a distinction in terminal and instrument values (pp. 36-37). Nevertheless, he continued to use two lists of values, which are combined after data collection.

The instructions of the SVS scale ask respondents to evaluate, on a nine-point scale, how important each value (item) is *"as a guiding principle in MY life"*. In contrast to ordinary Likert scales, the SVS uses scale anchors that range from -1 (*opposed to my values*) to 7 (*of supreme importance*). According to Schwartz (2006), pre-tests of the SVS revealed that respondents

rated most values between being weakly to extremely important. Thus, using a nonsymmetrical scale, which is stretched at the positive end and squeezed together at the negative pole of the scale, allows for better elicitation of personal values (p. 12). The scale instructions, moreover, told the respondents to read the entire list of values before rating them. Then, respondents were told to choose and rate the value(s) which they felt to be of superior importance to them, and then do the same thing for the value(s) they felt were most opposing to their values or of least important. This was supposed to help respondents to anchor the response scale for them. The priority an individual assigns to each of the ten value types is the average score given to all items that are assigned to that value type. The number of items used to measure each value type ranges from three (hedonism) to eight (universalism), depending on the conceptual breadth of each value type. For practical reasons[30], the ten value types were collapsed into the four higher-order dimensions self-transcendence, self-enhancement, conservation, and openness to change.

The SVS has been employed by Schwartz and colleagues in more than 60 countries in the last 20 years. Based on the findings of these studies, Schwartz posited that there is empirical support for the universal existence of the theorized ten distinct value types, which are arranged in a circular structure (Bilsky, Janik, & Schwartz, 2011). The circular structure of the value types displays how the value types are related to each other with respect to their underlying motivational goal (Schwartz, 1992, p. 45). According to several studies conducted by Schwartz and colleagues, the SVS items were found to exhibit near-equivalence of meaning across cultures according to smallest space analysis (Schwartz, 1992, 1994a) and confirmatory factor analysis (Schwartz and Boehnke, 2004). However, in five percent of the studied samples, a different factor structure than the theorized one emerged. These included samples from less developed countries, such as Sub-Saharan Africa, India, and Malaysia (Schwartz et al., 2001, p. 519). Measures concerning the reliability of the SVS are barely reported in the Schwartz's articles. Schwartz (1992) reported Cronbach's alphas for the SVS that ranged from .55 for tradition to .75 for the stimulation value (p. 52).

One assumption of factor analysis is that the items are measured on a balanced scale with equidistance (interval level). That implies the same amount of scale responses on the left and right side of the neutral point of the scale and the same distance between response points. However, the SVS does not fulfill this basic requirement. Furthermore, Schwartz pointed out that the SVS is not suitable for an exploratory factor analysis due to the circular structure in which the values are arranged (Schwartz, 2009, p. 6). Moreover, the HUDAP software package required to conduct smallest space analysis as described in Schwartz (2009), as well as the LISREL software needed to run the confirmatory factor analysis described in Schwartz and Boehnke (2004), were not available. Based on these arguments, we refrained from con-

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[30] According to Schwartz (2009), no more than eight of the ten personal values should be entered into a regression model (p.5).

ducting factor analysis of the SVS. The reliability analysis of the present sample obtained the following Cronbach's alpha for the higher-order value dimensions: self-transcendence (encompassing the values of benevolence and universalism) had a Cronbach's alpha of 0.77, self-enhancement (power and achievement) had a Cronbach's alpha of 0.79, conservation (conformity, tradition, security) had a Cronbach's alpha of 0.71, and openness to change (self-direction, stimulation, hedonism) had a Cronbach's alpha of 0.75. In line with suggestions from Schwartz and Boehnke (2004), the value of hedonism was included in the higher-order value type of openness to change (p. 252).

5.2.4 Socio-demographic Variables

The last section of the questionnaire contained nine socio-demographic questions concerning respondents' gender, age, citizenship, citizenship at birth, level of degree program (bachelor, master, miscellaneous), academic major, participation at courses or trainings that dealt with CSR, business ethics, sustainability or related topics, stays abroad that exceeded one year, and work experience. While the questions about citizenship and study program served the purpose to control for sample homogeneity, age, gender, and CS course attendance were used as control variables in the regression analysis. The selection of control variables was grounded on the literature review in Chapter 3.3 that found ambiguous results for the mentioned control variables.

5.3 Analyses and Results

The third part of this chapter provides findings on the relevance German business students ascribed to the three spheres of corporate sustainability for the long-term success of companies. To answer this question tests for differences between the CSA subscale means were carried out. Subsequently, multiple linear regression analyses were performed to examine the effect of individual cultural orientations and personal values on CS attitudes within the German sample, while controlling for age, gender, and CS course attendance.

5.3.1 Assumption Testing for Regression Analysis

Besides valid and reliable measured data, a meaningful linear regression analysis requires further assumptions to be met (Backhaus, Erichson, Plinke, Weiber, 2006, p. 79; Field, 2009, pp. 230-231). First, study variables need to be measured at an interval level. Independent variables can also be dichotomous (dummy variables). These requirements were fulfilled by the collected data. The data also met the requirements of non-zero variance, i.e. predictor variables had some variation. Moreover, respondents were asked to fill out the questionnaire only one time. Therefore, each data set was collected from separate individuals ensuring independence of dependent variables. Concerning the minimum sample size, rules of thumb recom-

mend collecting at least 10 to 15 cases per predictor variable (Field, 2009, p. 222). With nine predictor variables and three control variables the present study would require a minimum sample size of 120. The German sample ($n = 302$) is well above this suggested threshold.

Another assumption for a linear regression is that the relationship between independent and dependent variables is of linear nature. Scatter plots provided no evidence for non-linear trends. Study variables either showed linear (positive, negative) relationships or appeared to be completely uncorrelated. To examine the relationship between the study variables, we calculated pairwise correlation coefficients between the three CSA dimensions, Hofstede's five cultural dimensions, Schwartz' four higher-order personal value dimensions, and the control variables (age, gender, CS course). Table 5.9 on the following page reports the pairwise correlation coefficients between the dependent, independent and control variables, as well as the mean values, standard deviations, and Cronbach's alphas of the study variables. We included both the Pearson correlation coefficients and Spearman correlation coefficients of the study variables to examine whether not-normally distributed variables may cause any problems for the subsequent regression analyses. Both correlation coefficients revealed only minor differences regarding the relationships between the study variables. In particular, no change in sign of significant correlations between the Pearson and Spearman correlation coefficients was identified.

To test for multicollinearity among the independent variables, the correlation matrices of the study variables were scanned for correlations above .90. In addition, the variance inflation factor (VIF), which should be below a threshold of 10, was calculated (Hair et al., 2006, p. 227). Both criteria indicated that multicollinearity was not a problem, that is all pairwise correlations were well below the threshold of .90, the maximum VIF was 2.04 (self-transcendence) and the average VIF of the predictor variables were close to 1. However, a few of the predictor variables showed some moderate correlations, e.g. self-transcendence and conservation ($r = .55$). One explanation of the high correlations of these two higher-order Schwartz values types can be explained with their circular structure. Conservation and self-transcendence are located next to each other on the circle of value types (see Chapter 3.2.2) and can therefore be correlated to some extent. Contrary to previous findings (see Chapter 3.2.2), pairwise correlations between the five Hofstede dimensions and Schwartz's four higher order values were weak.

Independence of residual terms (autocorrelation) was tested with the Durban-Watson test. Values lower than 1 or higher than 3 appear to be problematic (Field, 2009, p. 220-221). The values of this test were close to 2 (environmental CSA=2.07; economic CSA = 2.08; social CSA = 1.86) for the German sample, indicating that the residuals are uncorrelated. According to the investigated regression plots of standardized residuals as a function of standardized pre-

Table 5.9: Descriptive Statistics and Pairwise Correlations between Study Variables

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Environmental CSA	5.17	0.91	(.87)	.01	.54	-.24	.15	-.24	.10	.07	.40	-.20	.08	.11	-.05	.15	.11
2 Economic CSA	5.86	0.81	.08	(.79)	.21	.03	.12	.03	.32	.25	-.11	.14	-.04	.08	-.05	-.14	-.10
3 Social CSA	5.64	0.77	.53	.42	(.72)	-.26	.22	-.17	.18	.20	.33	-.17	.15	.13	-.07	.13	.11
4 Power distance	3.00	0.99	-.28	-.04	-.29	(.72)	-.05	.44	.05	.07	-.26	.28	.07	-.07	.07	-.23	-.14
5 Collectivism	4.62	0.86	.17	.19	.26	-.06	(.79)	.08	.26	.11	.09	-.12	.09	-.08	.00	-.11	.06
6 Masculinity	3.48	1.38	-.28	-.02	-.19	.47	.06	(.72)	.13	.03	-.26	.14	.01	-.09	.09	-.47	-.05
7 Uncertainty avoidance	5.17	0.77	.12	.38	.27	.02	.29	.13	(.76)	.28	.04	.06	.15	-.04	-.15	-.07	-.03
8 Long-term orientation	5.29	0.73	.07	.30	.25	.08	.14	.06	.30	(.67)	.09	.28	.30	.03	-.16	.07	-.02
9 Self-transcendence	4.11	0.82	.40	-.11	.26	-.26	.10	-.29	.05	.06	(.77)	-.06	.53	.26	-.04	.25	-.01
10 Self-enhancement	3.62	1.02	-.22	.10	-.17	.28	-.13	.19	.05	.30	-.08	(.79)	.29	.28	.06	-.15	-.07
11 Conservation	3.42	0.76	.07	-.03	.12	.05	.09	-.01	.15	.29	.55	.28	(.71)	.09	-.06	.05	.00
12 Openness to change	4.52	0.82	.07	.05	.10	-.07	-.08	-.10	-.07	.02	.25	.25	.07	(.75)	-.04	.00	-.01
13 Age	22.64	1.87	-.07	-.07	-.07	.10	-.04	.08	-.16	-.17	-.02	.04	-.02	-.08	-	-.20	.10
14 Gender	0.48	0.50	.15	-.18	.08	-.23	-.10	-.47	-.08	.05	.25	-.15	.06	.01	-.17	-	-.08
15 CS course	0.19	0.40	.12	-.05	.11	-.13	.06	-.06	-.01	-.01	-.02	-.06	-.01	-.01	.09	-.08	-

Note: German sample $n = 302$. Gender (female = 1) and CS course (yes = 1) are dummy variables. SD = standard deviation. Pearson correlation coefficients are below the diagonal and Spearman correlation coefficients are above the diagonal. All correlation coefficients above |.11| are significant at $p < .05$ (two-tailed). Reliability measures (Cronbach's alpha) for each study variable are displayed in parentheses on the diagonal.

dicted values, histograms, and the normal probability plot of the residuals, the residuals followed a normal distribution and had constant variance. Thus, heteroscedasticity should not be a problem. In addition, due to the fact that independent and dependent variables were collected through the same self-reported survey and thus present cross-sectional data, Harman's single-factor test was conducted, using a PCA with varimax rotation, to test for the possibility of common method variance. The unrotated factor solution of the factor analysis, including all study variables, produced distinct factors with none of the factors accounting for the majority of the covariance among the measures (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003, p. 889). Hence, it can be assumed that a common method bias is not present.

5.3.2 Relevance of Corporate Sustainability Spheres

As can be seen from Table 5.9 on the previous page, the means of the three CSA subscales are 5.17 for the environmental dimension, 5.86 for the economic dimension, and 5.64 for the social dimension. Accordingly, the respondents on average evaluated all three dimensions of corporate sustainability well above the neutral point of the scale (3.5). From this it can be inferred that the student sample considered all three CS dimensions to be highly relevant for the long-term success of companies. In addition, a series of paired-sample t-tests was conducted to test for mean differences between the three CS dimensions. On average, respondents rated the economic CS dimension ($M = 5.86$, $SE = .05$) higher than the environmental CS dimension ($M = 5.17$, $SE = .05$), ($t_{(301)} = 10.40$, $p < .001$, $r = .51$), and the social CS dimension ($M = 5.64$, $SE = .04$), ($t_{(301)} = 4.51$, $p < .001$, $r = .25$). Moreover, the environmental dimension was ranked significantly lower than the social dimension ($t_{(301)} = 10.09$, $p < .001$, $r = .50$). Additionally, results from a Wilcoxon signed rank test, a non-parametric test, confirmed the findings of the dependent t-test (see Table 5.10).

Table 5.10: Mean Differences between CSA Dimensions

Dimension	T Value	Z Value
Economic/environmental	10.40***	-9.30***
Economic/social	4.51***	-4.12***
Social/environmental	10.09***	-9.03***

Note: German sample $n = 302$. *** $p < .001$; Dependent t-test; Wilcoxon signed rank test.

Prior to the regression analysis, independent t-tests and a non-parametric Mann-Whitney test on the difference between females' and males' attitudes toward the three CS dimensions were carried out (see Table 5.11). Results of the independent t-tests revealed only a marginally significant difference concerning the attitude toward economic CS, $t_{(301)} = -3.12$, $p < .05$, $r = .18$, with males ($M = 6.00$, $SE = .05$) rating the economic dimension higher than females ($M = 5.71$, $SE = .08$). In contrast, the Mann-Whitney test, a non-parametric test, revealed marginally significant differences for the attitudes toward all three dimensions.

Table 5.11: Gender Differences across CSA Dimensions

Dimension	Male Mean (n=157)	Female Mean (n=145)	T Value	Z Value
Environmental	5.03	5.31	-2.64	-2.54*
Economic	6.00	5.71	3,12*	-2.41*
Social	5.58	5.71	-1.43	-2.23*

Note: * $p < .05$; Independent samples t-test; Mann-Whitney test.

The same tests were conducted to investigate the differences in attitudes toward the three dimensions of CS between students who have been exposed to CS topics through the participation in CS course in the past and students who have not. Table 5.12 shows that both the independent t-test and the Mann-Whitney test found a significant difference in the attitude toward corporate environmental sustainability between the group who had attended some form of CS course or training ($M = 5.39$, $SE = .11$) and the no CS course group ($M = 5.11$, $SE = .06$). The two groups did not differ significantly with respect to their economic and social CSA.

Table 5.12: CS Exposure and Differences in CSA Dimensions

Dimension	CS course Mean (n=58)	No CS course Mean (n=244)	T Value	Z Value
Environmental	5.39	5.11	-2.06*	-1.99*
Economic	5.79	5.88	0.81	-1.77
Social	5.81	5.60	-1.89	-1.83

Note: * $p < .05$; Independent samples t-test; Mann-Whitney test.

5.3.3 Hypotheses Testing

Besides investigating respondents' attitudes toward the importance of the three spheres of CS, the dissertation attempts to shed light on whether and how individual cultural orientations and personal values affect the attitudes toward CS. To test the impact of respondents individual cultural orientations (Hypotheses 1 to 5) and personal values (Hypotheses 6 to 8) on their attitudes toward the three dimensions of CS, ordinary least squares (OLS) hierarchical regressions for each CSA dimension were run, controlling for age, gender, and CS course. In each regression model, the individual mean scores of the CSA subscales served as the dependent variable, and the mean scores of each of the five Hofstede dimensions and four higher-order Schwartz dimensions served as the independent variables.

For the hierarchical regression analyses respondents' environmental, economic, and social CSA were regressed separately on three blocks of control variables and predictor variables. The first block included the control variables age, gender, and CS course (Model 1). The second block of predictor variables consisted of the five Hofstede dimensions (Model 2), and the third block included the four higher-order Schwartz values (Model 3). Subsequently, each

block was added to the regression model, starting with the first block of control variables. Starting with the control variables and adding the two blocks of predictor variables separately, controls for the socio-demographic characteristics prior to testing the hypothesized relationships between the predictor variables and respondents' CSA. Detailed results on the single stages of the hierarchical regressions of each CSA subscale are provided in Table 5.16, Table 5.17, and Table 5.18 in the Appendix of Chapter 5.

Table 5.13 summarizes the results of the three separate hierarchical OLS regressions for environmental, economic, and social CSA, respectively, including all blocks (Model 4). The regression model for environmental CSA explained 28 percent of the variance in the dependent variable (adjusted $R^2 = .25$), the model for economic CSA explained 28 percent of the variance (adjusted $R^2 = .26$), and the model for social CSA explained 29 percent of the variance in the dependent model (adjusted $R^2 = .26$).

Table 5.13: Results of Regression Analyses

Variable	ENV		ECON		SOC	
Intercept	3.31	(.88)***	3.39	(.77)***	2.52	(.73)**
Controls						
Age	-.01	(.03)	.01	(.02)	.02	(.02)
Gender	-.04	(.11)	-.37	(.10)***	-.04	(.09)
CS Course	.22	(.12)†	-.18	(.10)†	.12	(.10)
Cultural values						
Power distance	-.06	(.06)	-.06	(.05)	-.14	(.05)**
Collectivism	.09	(.06)	.09	(.05)†	.12	(.05)*
Masculinity	-.09	(.04)*	-.12	(.04)**	-.05	(.04)
Uncertainty avoidance	.10	(.07)	.32	(.06)***	.19	(.05)**
Long-term orientation	.13	(.07)†	.27	(.06)***	.26	(.06)***
Personal values						
Self-transcendence	.46	(.08)***	-.15	(.07)*	.10	(.07)
Self-enhancement	-.11	(.06)†	.02	(.05)	-.15	(.05)**
Conservation	-.19	(.08)*	-.07	(.07)	.01	(.07)
Openness to change	.01	(.06)	.09	(.06)	.12	(.05)*
R^2	.28		.28		.29	
Adjusted R^2	.25		.26		.26	
F	9.17***		9.57***		10.00***	
N	302		302		302	

Note: German sample $n = 302$. OLS regression results. Dependent variables: ENV = environmental CSA, ECON = economic CSA, SOC = social CSA. Beta coefficients are unstandardized; standard errors are in parentheses. Gender (female = 1) and CS Course (yes = 1) are dummy variables. † $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Control variables: Model 1 in Table 5.16, Table 5.17, and Table 5.18 in the Appendix of Chapter 5 shows that the control variables of age, gender, and CS course attendance accounted only for a very small degree of explained variance in the three regression models. The R^2 ranged between .03 and .05. After adding the other two blocks of predictor variables, gender was a significant determinant for economic CSA (see Table 5.13). That is females had a sig-

nificantly less favorable attitude toward the relevance of economic CS for companies' long-term success. In addition, CS course attendance showed a weak, but marginally significant positive relationship with environmental CSA and a significant negative relationship with economic CSA at the 10 percent level. However, CS course attendance had no effect on attitudes toward social CSA.

Individual cultural orientations: The additional explained variance when adding the second block with the five Hofstede dimensions ranged between 12 and 22 percent in the three CSA models (Model 2 in Table 5.16, Table 5.17, and Table 5.18 in the Appendix of Chapter 5). Hypotheses H1a predicted power distance to be negatively linked to social CSA. The results of the regression analysis found support for a negative influence of higher power distance on favorable attitudes toward social CS. Thus, H1a was supported. Hypotheses H2a and H2b posited that collectivism is associated with a more favorable attitude toward environmental and social CS. In this study, collectivism was not only a significant positive determinant of social CSA but also of economic CSA (at the 10 percent level). However, it had no significant effect on the attitude toward environmental CS. Thus, H2b was supported, while H2a had to be rejected. Hypotheses H3a, H3b, and H3c stated that higher values in masculinity are negatively linked to a favorable environmental and social CSA and positively to a favorable economic CSA. The regression results supported only the negative influence of masculinity on environmental CSA. H3a was supported. Counter to predictions, masculinity was not a positive but a negative determinant of economic CSA. Hence, H3b and H3c were rejected. Hypotheses H4a and H4b predicted individuals exhibiting higher uncertainty avoidance would have more favorable attitudes toward environmental and social CSA. The effect of higher uncertainty avoidance on attitudes supportive of environmental CS was not significant. Thus, H4a was rejected. However, higher uncertainty avoidance showed a significant positive effect on attitudes supportive of social CS, providing support for H4b, and on economic CS. The effect on economic CS was, indeed, surprisingly strong. Finally, consistent with hypotheses H5a, H5b, and H5c, the regression results indicated that higher long-term orientation has a significant positive effect on all three dimensions of CSA. Thus, H5a to H5c are supported.

Personal values: Hypotheses H6a and H6b predicted a positive association between self-transcendence values and a favorable attitude toward environmental and social CS. Respondents showing a high level of self-transcendence had a more favorable attitude toward environmental CS, lending support to H6a. H6b was not supported. Moreover, high self-transcendence has a significant negative influence on favorable economic CS attitudes. In line with H7a and H7b, higher scores in self-enhancement resulted in less favorable attitudes toward environmental and social CS. Finally, conservation values showed a negative association with attitudes supportive of environmental CS. Thus, H8a was supported. A significant effect on social CS was not found, which led to the rejection of H8b. A summary of the hypotheses and results are provided on the following page in Table 5.14.

Table 5.14: Summary of Results for the German Sample

Hypotheses		Results
Individual cultural orientations		
H1a	Higher power distance is negatively related to attitudes supportive of socially sustainable business practices.	**Supported**
H2a	Collectivism is positively related to attitudes supportive of environmentally sustainable business practices.	Rejected
H2b	Collectivism is positively related to attitudes supportive of socially sustainable business practices.	**Supported**
H3a	Masculinity is negatively related to attitudes supportive of environmentally sustainable business practices.	**Supported**
H3b	Masculinity is negatively related to attitudes supportive of socially sustainable business practices.	Rejected
H3c	Masculinity is positively related to attitudes supportive of economically sustainable business practices.	Rejected
H4a	Higher uncertainty avoidance is positively related to attitudes supportive of environmentally sustainable business practices.	Rejected
H4b	Higher uncertainty avoidance is positively related to attitudes supportive of socially sustainable business practices.	**Supported**
H5a	Long-term orientation is positively related to attitudes supportive of environmentally sustainable business practices.	**Supported**
H5b	Long-term orientation is positively related to attitudes supportive of socially sustainable business practices.	**Supported**
H5c	Long-term orientation is positively related to attitudes supportive of economically sustainable business practices.	**Supported**
Personal Values		
H6a	Self-transcendence (universalism, benevolence) is positively related to attitudes supportive of environmentally sustainable business practices.	**Supported**
H6b	Self-transcendence (universalism, benevolence) is positively related to attitudes supportive of socially sustainable business practices.	Rejected
H7a	Self-enhancement (achievement, power) is negatively related to attitudes supportive of environmentally sustainable business practices.	**Supported**
H7b	Self-enhancement (achievement, power) is negatively related to attitudes supportive of socially sustainable business practices.	**Supported**
H8a	Conservation (tradition, conformity, security) is negatively related to attitudes supportive of environmentally sustainable business practices.	**Supported**
H8b	Conservation (tradition, conformity, security) is negatively related to attitudes supportive of socially sustainable business practices.	Rejected

The results of the regression analysis provide evidence for the predictive power of individual cultural orientations and personal values on CSA. In the environmental CSA model, long-term orientation, self-transcendence, and CS course attendance had a marginally significant positive effect on respondents' attitude toward environmental CSA, while masculinity, self-enhancement, and conservation affected their attitudes toward environmental CS negatively. In the economic CSA model, collectivism, uncertainty avoidance, and long-term orientation negatively affected the attitude toward economic CS, while masculinity and self-

transcendence negatively affected economic CSA. Moreover, females and CS course participants had significantly less favorable attitudes toward economic CS. In the social CSA model, uncertainty avoidance, long-term orientation, and openness to change were significant positive determinants of the attitude toward social CS, while power distance and self-enhancement were negative determinants. A final discussion of the results will be postponed to Chapter 7, combining the findings of the German sample and the other five country samples.

Summing up the findings of Chapter 5, the conducted EFA and CFA supported the three-dimensional structure of the CSA scale and provided evidence for its psychometric soundness. In addition, preliminary answers to the raised research questions at the beginning of the dissertation can be given. German business students do not attribute equal importance to the environmental, economic, and social CS dimension. Instead, they rated economic CS highest followed by social and environmental CS. Concerning the second research question, individual cultural orientations and personal values were shown to predict some of the variance in CS attitudes for the present German business student sample. The following chapter will extend the empirical study to an international scope.

Appendix to Chapter 5

Table 5.15: Correlation Matrix of the 30 CSA Scale Items

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1		.34	.27	.34	.05	.31	.16	.15	.17	.23	.01	.16	.31	.07	.11	.26	.29	.26	.13	.03	.29	.18	.18	.30	.20	.19	.26	.17	.21	.18
2	.21		.24	.27	-.14	.42	.07	.25	.07	.34	.03	.11	.23	.03	-.01	.08	.10	.31	.07	.16	.30	.04	.12	.23	.30	.13	.10	.29	.08	.21
3	.26	.18		.41	.24	.10	.26	.00	.51	-.03	.10	.09	.33	-.03	.30	.52	.26	.16	-.01	-.01	.22	.40	.30	.26	-.01	.40	.14	-.02	.46	.09
4	.26	.19	.40		.05	.37	.21	.27	.29	.21	.09	.12	.32	-.02	.15	.26	.50	.25	.16	.03	.38	.22	.26	.25	.29	.30	.20	.16	.27	.12
5	.05	-.18	.24	.07		-.03	.13	-.08	.20	-.15	.22	-.09	.09	.10	.06	.21	.13	.07	.02	-.13	.00	.16	.28	.08	-.02	.13	.13	-.10	.24	.02
6	.13	.37	.03	.27	-.06		.07	.45	.10	.41	-.01	.08	.21	.11	-.06	.12	.24	.43	.17	.15	.27	.11	.12	.44	.54	.09	.18	.40	.10	.23
7	.16	.05	.24	.23	.17	.04		-.12	.28	.01	.25	.08	.21	.15	.41	.30	.21	.15	.05	-.13	.23	.26	.36	.23	-.06	.25	.17	-.06	.32	.05
8	.06	.28	.00	.20	-.11	.40	-.11		-.02	.45	-.17	-.04	.07	-.18	-.17	-.06	.08	.25	.12	.29	.09	-.03	-.15	.17	.43	.03	-.03	.41	-.08	.24
9	.15	.08	.49	.32	.23	.06	.29	-.03		-.07	.21	.09	.42	.01	.31	.52	.38	.17	-.01	-.07	.24	.52	.31	.27	.07	.43	.25	.02	.56	.10
10	.13	.28	-.06	.17	-.16	.35	.04	.45	-.10		-.03	-.03	.11	-.06	-.07	-.08	.04	.24	.24	.27	.19	-.06	.06	.17	.47	.03	.23	.32	-.06	.28
11	-.03	.05	.07	.11	.24	.01	.26	-.15	.21	-.01		-.08	.15	.26	.18	.26	.17	.02	.10	-.15	.10	.26	.43	.02	-.06	.11	.21	-.10	.23	.06
12	.13	.08	.07	.11	-.09	.05	.08	-.04	.09	-.05	-.08		.24	-.03	.20	.13	.16	.18	-.04	-.17	.13	.16	-.02	.23	.10	.20	.11	-.02	.18	-.08
13	.29	.22	.28	.31	.11	.13	.22	.01	.41	.07	.17	.23		.02	.31	.50	.36	.35	.09	.02	.29	.50	.30	.32	.19	.56	.19	.17	.48	.10
14	.04	.06	-.05	-.02	.09	.09	.11	-.17	-.01	-.04	.24	-.02	.02		-.03	.04	.10	-.02	.21	-.11	.02	.04	.15	.11	.00	.00	.15	-.08	.03	.13
15	.11	-.02	.29	.18	.09	-.10	.38	-.17	.30	-.09	.18	.19	.30	-.06		.49	.29	.14	-.15	-.08	.22	.27	.19	.12	-.09	.33	.14	-.06	.41	.00
16	.24	.05	.50	.28	.25	.09	.26	-.07	.53	-.08	.25	.12	.48	.00	.47		.52	.28	-.08	-.07	.22	.58	.34	.25	.05	.54	.19	-.01	.59	.05
17	.27	.09	.29	.51	.15	.18	.21	.01	.39	.00	.17	.17	.40	.10	.31	.50		.30	.05	.00	.38	.41	.27	.35	.25	.37	.29	.11	.42	.07
18	.16	.22	.13	.18	.03	.35	.13	.20	.14	.16	.00	.11	.25	-.03	.17	.25	.29		.09	.14	.31	.21	.15	.40	.38	.24	.18	.21	.22	.16
19	.13	.06	.05	.17	.03	.13	.10	.08	.02	.20	.11	-.02	.14	.22	-.08	-.03	.11	.08		-.06	.11	-.03	.20	.20	.27	.09	.25	.13	-.01	.15
20	.03	.20	-.02	.03	-.17	.12	-.11	.30	-.06	.31	-.12	-.12	.05	-.08	-.04	-.04	.03	.14	-.06		.08	-.07	-.08	.06	.22	-.03	-.20	.39	-.13	.16
21	.19	.23	.17	.34	.00	.16	.24	.01	.24	.13	.13	.12	.33	.02	.22	.21	.36	.26	.17	.09		.27	.28	.36	.22	.25	.29	.22	.25	.15
22	.17	.06	.38	.25	.18	.07	.27	-.07	.54	-.09	.28	.15	.47	.02	.27	.57	.40	.21	.02	-.07	.32		.32	.19	.10	.56	.21	.04	.65	.04
23	.18	.13	.30	.28	.33	.08	.40	-.17	.35	.05	.42	.01	.34	.16	.20	.35	.29	.12	.23	-.05	.33	.35		.26	.09	.31	.39	.07	.42	.13
24	.22	.18	.22	.19	.08	.28	.19	.13	.25	.13	.03	.19	.27	.10	.12	.24	.38	.30	.20	.04	.33	.20	.29		.45	.27	.35	.26	.32	.25
25	.08	.28	-.02	.21	-.02	.44	-.02	.36	.05	.44	-.05	.05	.16	.01	-.08	.06	.22	.28	.21	.24	.18	.10	.08	.43		.17	.24	.45	.12	.30
26	.17	.11	.37	.28	.18	.03	.28	-.02	.44	.01	.11	.17	.53	.01	.35	.56	.38	.20	.14	-.05	.24	.54	.35	.23	.13		.11	.08	.57	.04
27	.18	-.01	.14	.20	.15	.06	.17	-.12	.23	.10	.23	.11	.20	.15	.15	.18	.29	.10	.26	-.21	.30	.23	.42	.33	.13	.13		.04	.33	.24
28	.09	.25	-.05	.09	-.11	.30	-.02	.35	-.01	.31	-.05	-.03	.17	-.05	-.03	.01	.09	.13	.07	.42	.18	.03	.10	.22	.36	.05	.00		05	.21
29	.21	.09	.43	.28	.28	.05	.30	-.13	.55	-.10	.25	.14	.47	.04	.39	.57	.43	.20	.04	-.15	.29	.66	.44	.27	.08	.56	.31	.06		.15
30	.14	.22	.06	.11	.03	.22	.05	.24	.08	.29	.07	-.10	.10	.12	-.02	.04	.06	.11	.15	.22	.16	.05	.16	.22	.29	.06	.18	.23	.13	

Note: German sample $n = 302$. Item numbers correspond to Table 4.3 in the Appendix of Chapter 4. Pearson correlation coefficients are above the diagonal and Spearman correlation coefficients are below the diagonal. All correlation coefficients above |.10| are significant at $p < .05$. Overall measure of sampling adequacy (KMO): .85. Bartlett's test of sphericity $\chi^2_{(435)} = 3192.51$. $p < .001$.

Table 5.16: Hierarchical Regression Analysis of Environmental CSA

Variable	Model 1		Model 2		Model 3		Model 4	
Intercept	5.52	(.65)***	4.44	(.86)***	4.67	(.69)***	3.31	(.88)***
Controls								
Age	-.02	(.03)	.00	(.03)	-.03	(.03)	-.01	(.03)
Gender	.28	(.11)**	.08	(.11)	-.04	(.10)	-.04	(.11)
CS Course (yes)	.31	(.13)*	.19	(.13)	.29	(.12)*	.22	(.12)†
Cultural values								
Power distance			-.15	(.06)**			-.06	(.06)
Collectivism			.15	(.06)*			.09	(.06)
Masculinity			-.13	(.04)**			-.09	(.04)*
Uncertainty avoidance			.11	(.07)			.10	(.07)
Long-term orientation			.06	(.07)			.13	(.07)†
Personal values								
Self-transcendence					.52	(.08)***	.46	(.08)***
Self-enhancement					-.12	(.05)*	-.11	(.06)†
Conservation					-.17	(.08)*	-.19	(.08)*
Openness to change					.01	(.06)	.01	(.06)
R^2	.04		.16		.23		.28	
Adjusted R^2	.03		.13		.21		.25	
ΔR^2			.12***		.18***		.23***	
F	4.38**		6.84***		12.25***		9.17***	
N	302		302		302		302	

Note: German sample $n = 302$. OLS regression results. Dependent variable: ENV = environmental CSA. Coefficients are unstandardized. Standard errors are in parentheses. Gender (female = 1) and CS Course (yes = 1) are dummy variables. ΔR^2 refers to the change in R^2 of (M2 – M1), (M3 – M1), and (M4 – M1). $^\dagger p < .1$; $^* p < .05$; $^{**} p < .01$; $^{***} p < .001$.

Table 5.17: Hierarchical Regression Analysis of Economic CSA

Variable	Model 1		Model 2		Model 3		Model 4	
Intercept	7.02	(.57)***	3.43	(.72)***	6.89	(.68)***	3.39	(.77)***
Controls								
Age	-.04	(.03)†	.00	(.02)	-.04	(.03)	.01	(.02)
Gender	-.33	(.09)**	-.43	(.10)***	-.28	(.10)**	-.37	(.10)***
CS Course (yes)	-.11	(.12)	-.17	(.11)	-.10	(.12)	-.18	(.10)†
Cultural values								
Power distance			-.04	(.05)			-.06	(.05)
Collectivism			.06	(.05)			.09	(.05)†
Masculinity			-.10	(.04)**			-.12	(.04)**
Uncertainty avoidance			.30	(.06)***			.32	(.06)***
Long-term orientation			.26	(.06)***			.27	(.06)***
Personal values								
Self-transcendence					-.08	(.08)	-.15	(.07)*
Self-enhancement					.04	(.05)	.02	(.05)
Conservation					.01	(.08)	-.07	(.07)
Openness to change					.05	(.06)	.09	(.06)
R^2	.05		.25		.06		.28	
Adjusted R^2	.04		.23		.03		.26	
ΔR^2			.20***		.01		.24***	
F	4.79**		12.12***		2.49*		9.57***	
N	302		302		302		302	

Note: German sample $n = 302$. OLS regression results. Dependent variable: ECON = economic CSA. Coefficients are unstandardized. Standard errors are in parentheses. Gender (female = 1) and CS Course (yes = 1) are dummy variables. ΔR^2 refers to the change in R^2 of (M2 – M1), (M3 – M1), and (M4 – M1). $^\dagger p < .1$; $^* p < .05$; $^{**} p < .01$; $^{***} p < .001$.

Table 5.18: Hierarchical Regression Analysis of Social CSA

Variable	Model 1		Model 2		Model 3		Model 4	
Intercept	6.17	(.55)***	3.40	(.68)***	5.34	(.62)***	2.52	(.73)**
Controls								
Age	-.03	(.02)	.01	(.02)	-.03	(.02)	.02	(.02)
Gender	.12	(.09)	.00	(.09)	.00	(.09)	-.04	(.09)
CS Course (yes)	.24	(.11)*	.12	(.10)	.21	(.11)†	.12	(.10)
Cultural values								
Power distance			-.19	(.05)***			-.14	(.05)**
Collectivism			.15	(.05)**			.12	(.05)*
Masculinity			-.06	(.04)†			-.05	(.04)
Uncertainty avoidance			.19	(.06)**			.19	(.05)**
Long-term orientation			.21	(.06)***			.26	(.06)***
Personal values								
Self-transcendence					.18	(.07)*	.10	(.07)
Self-enhancement					-.14	(.05)**	-.15	(.05)**
Conservation					.06	(.07)	.01	(.07)
Openness to change					.09	(.06)	.12	(.05)*
R^2	.03		.24		.12		.29	
Adjusted R^2	.02		.22		.10		.26	
ΔR^2			.22***		.09***		.27***	
F	2.51†		11.67***		5.51***		10.00***	
N	302		302		302		302	

Note: German sample $n = 302$. OLS regression results. Dependent variable: SOC = social CSA. Coefficients are unstandardized. Standard errors are in parentheses. Gender (female = 1) and CS Course (yes = 1) are dummy variables. ΔR^2 refers to the change in R^2 of (M2 – M1), (M3 – M1), and (M4 – M1). † $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$.

6 Attitudes toward Corporate Sustainability - A Six Country Study

While Chapter 5 provided reasonable evidence on the reliability and validity of the newly developed CSA scale based on a large scale study in Germany, it remains to be seen if the scale also exhibits measurement stability across different countries. Chapter 6 is a first attempt of testing the cross-cultural measurement invariance of the three CSA subscales by extending the study on attitudes toward corporate sustainability to an international scope. Similar to the German study in Chapter 5, the CSA scale was part of a questionnaire survey that collected data to examine the role of individual cultural orientations and personal values on respondents' attitudes toward the three spheres of corporate sustainability. The questionnaire survey was carried out among business students from universities in six countries, including Brazil, China, Germany, India, Russia, and the USA. The remainder of Chapter 6 is organized as follows: First, the country samples and data collection are described, including explanations of the country sample selection and considerations that pertain to cross-cultural research. Thereafter, the applied measurement scales are described and their psychometric properties are reported. Special attention is attributed to the test of measurement invariance of the self-developed CSA subscales across the six countries. Subsequently, the analysis of the data and the results are described. More precisely, mean differences between the three CS dimensions were analyzed, followed by multiple linear regression analysis to test the hypothesized relationships posed in Chapter 3 for each of the six countries and the pooled sample.

6.1 Sample and Data Collection

The data for the multi-country study was collected through a paper-and-pencil survey in six countries on four continents, including Brazil, China, Germany, India, Russia, and the USA, between July 2011 and April 2012. The selection of countries was based on several considerations. First, the countries represent six of the ten societal clusters identified in the GLOBE study (Gupta & Hanges, 2004, p. 178; Gupta, Hanges, & Dorfman, 2002, p. 13). The six clusters that have been covered in the present study are Anglo cultures (USA), Germanic Europe (Germany), Eastern Europe (Russia), Latin America (Brazil), Southern Asia (India), and Confucian Asia (China). The diverse cultural backgrounds of respondents, from countries that are characterized by different levels of economic and political development, allow the present study to ascertain whether differences in respondents' attitudes toward the three aspects of CS are present across these countries. With Brazil, China, India and Russia, the study includes four major emerging markets, some of which were characterized by a planned economy in the past. Indeed, according to the conducted literature review in Chapter 3, emerging markets are understudied concerning perspectives on CSR and CS. In academic and public discourse, the Anglo-Saxon view has dominated the discussion on CSR and CS topics. However, attitudes and perspectives on CS might differ in emerging markets. Hence, gathering data in the BRIC countries will add depth to CS research. Apart from theoretical considerations, the studied

country samples represent six of the largest economies in the world in terms of gross domestic product in the year 2011, with the USA in first place, China in second place, Germany in fourth place, Brazil in sixth place, Russia in ninth place, and India in eleventh place among 184 nations (International Monetary Fund, 2012).

As discussed in Chapter 5, random sampling in cross-cultural studies makes it harder to compare the results. In this case, it is not clear if the observed differences are due to cultural differences or non-controlled differences. Hence, it is recommended to conduct cross-cultural research among equivalent samples in terms of background variables (Vijver & Leung, 1997, p. 30). For this reason, the study was carried out among a matched sample of university students in the field of management and economics. Moreover, each country sample was collected at one university in the respective country, namely the FGV/EBAPE School of Administration in Rio de Janeiro (Brazil), Xiamen University (China), Otto-von-Guericke University in Magdeburg (Germany), Indian Institute of Management in Ahmedabad (India), St. Petersburg University (Russia), and San Diego State University (USA). The described considerations aim at controlling for demographic differences, including age, educational background, and social status, and thus help to ensure sample equivalence.

Another important aspect that has to be accounted for in cross-cultural studies is translation equivalence and a consistent questionnaire format. Using the English version of the questionnaire as a common anchor, a standard translation back-translation procedure, as suggested by Brislin (1970), was applied to ensure equivalence across the different language versions. This procedure first required two native speakers to independently translate the questionnaire from English into the respective language (Chinese, German, Portuguese, and Russian[31]). After comparing the translations and resolving any wording discrepancies, a third person blindly back-translated the concerted version (Brislin, 1970, pp. 214-215). Final differences between the original, back-translated and translated version were then resolved. In addition, we were able to test the Chinese version of the questionnaire in a small pilot study with ten Chinese respondents. To ensure a consistent data collection procedure across all six country samples the same procedure was used in all countries. The questionnaires were administered during class time in the presence of a professor. The students were asked to voluntarily participate in the study by filling out the questionnaire. All questionnaires were collected directly after their completion.

To analyze the data, the statistical software packages SPSS 20.0 and AMOS 20.0 were used. In the first step of review, the questionnaires were screened for incomplete data and evident answering patterns. In line with the procedures explained in Chapter 5, questionnaires were removed if they contained more than 10 percent missing values per scale or if any of the other criteria explained in Chapter 5 applied. For example, if a respondent left more than three

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[31] The different language versions are available from the author upon request.

items in the 30 item CSA scale blank, the questionnaire was discarded from the sample.[32] Moreover, any bias owed to multicultural influences had to be avoided. Therefore, questionnaires from transnational students, i.e. participants who were not citizen or citizen at birth of the respective country, were excluded from the analysis. In total, we gathered 101 questionnaires in Brazil, 267 questionnaires in China, 361 questionnaires in Germany, 106 questionnaires in India, 250 questionnaires in Russia, and 377 in the USA. Identification of questionnaires filled out by non-citizens of the respective country, missing socio-demographic information (e.g. age, gender, study program, citizenship), missing values and patterns in the measurement scales, as well as extreme value analysis, resulted in a final number of usable questionnaires of 94 in Brazil, 174 in China, 302 in Germany, 84 in India, 198 in Russia, and 177 in the USA. In the case of the USA, which is characterized by a high level of immigrants, we had to exclude a large number of questionnaires because respondents were not born in the USA.

Descriptive statistics of the pooled sample and individual country samples' demographics are presented in Table 6.1. The pooled study sample, which combines the data of all country samples, consisted of 1029 questionnaires filled out by university students from the six countries. The majority of students were enrolled in economic and management study programs. A smaller part of the students studied related programs (e.g. industrial engineering, business informatics, etc.). The pooled sample was composed of 588 (57%) female and 441 (43%) male respondents. Eight hundred fifty-one (83%) of the respondents were enrolled in undergraduate programs, while the number of graduates amounted to 178 (17%). The age of the students ranged from 16 years to 53 years. However, the majority of students was between 18 and 26 (> 90% of the sample), with 21.8 years (*SD*: 3.80) as the average age. The respondents form a relatively homogenous sample in terms of age and educational background.

Table 6.1: Descriptive Statistics

Demographic data	Brazil		China		Germany		India		Russia		USA		Pooled	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Sample size	94		174		302		84		198		177		1029	
Mean age	25.5	(7.2)	21.0	(0.9)	22.6	(1.9)	22.4	(1.7)	18.3	(0.8)	23.1	(4.6)	21.8	(3.8)
Male	63	(67.0)	45	(25.9)	157	(52.0)	42	(50.0)	50	(25.3)	84	(47.5)	441	(42.9)
Female	31	(33.0)	129	(74.1)	145	(48.0)	42	(50.0)	148	(74.7)	93	(52.5)	588	(57.1)
Undergraduate	71	(75.5)	168	(96.6)	237	(78.5)	5	(6.0)	196	(99.0)	174	(98.3)	851	(82.7)
Business major	59	(62.8)	174	(100)	182	(60.3)	73	(86.9)	191	(96.5)	174	(98.3)	853	(82.9)
CS course (yes)	41	(43.6)	45	(25.9)	58	(19.2)	20	(24)	40	(20.2)	110	(62.1)	314	(30.5)

Note: Percentages for dummy variables and standard deviations for age are given in parentheses.

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[32] Chapter 5.1 provides detailed information on how we proceeded with respondents' omission of items.

6.2 Measurement Instruments

The questionnaire employed for the multi-country study was identical to the questionnaire used for the German study in Chapter 5. It contained five sections with overall 133 items. Besides the self-developed CSA scale, which constituted the first section, the questionnaire included the following established measurement instruments: the CVSCALE (Yoo et al., 2011) to collect data on Hofstede's cultural dimensions at the individual level and the Schwartz Value Survey (Schwartz, 1992) to assess personal values. Furthermore, questions on career preferences, social entrepreneurial intent (Prieto, 2010) and a final section on socio-demographic questions (age, gender, citizenship, study program, major, work experience, international exposure, courses on CSR, CS, etc) were included. A copy of the English language questionnaire is to be found in the Appendix of Chapter 4. The following subchapters will provide further information on the measurement scales that were used for the present study.

6.2.1 CSA Scale

The three-dimensional construct of corporate sustainability attitude was employed as the dependent variables in the present study. The three dimensions of CSA were measured with the self-developed CSA scale, including the attitude toward environmental CS, economic CS, and social CS. The respondents had to rate 30 items - 10 items for the economic, environmental, and social subscale, respectively - on a seven-point Likert scale with 1 representing *"strongly disagree"*, 4 *"neither agree nor disagree"*, 7 *"strongly agree"*. The points 2, 3, 5 and 6 had no verbal anchor. Detailed explanations on the CSA scale and its items are provided in Chapter 4 and Chapter 5.

One of the three objectives of the dissertation was to develop a new measurement instrument that is not only valid in one country, but exhibits measurement equivalence across different countries. The literature review in Chapter 3 revealed that none of the reviewed cross-national studies, with the exception of Furrer et al. (2010) and Burton et al. (2000), tested for measurement invariance of the employed constructs (e.g. CSRO, PRESOR, etc.). However, if the measured construct lacks equivalence across countries, one cannot draw substantive conclusions (Cheung & Rensvold, 2002, p. 233; Singh, 1995, pp. 603-604; Steenkamp & Baumgartner, 1998) because it is not clear if differing findings can be traced back to *"true attitudinal difference, or to different psychometric responses to the scale items"* (Cheung & Rensvold, 2002, p. 234). Hence, before running regression analyses to test the hypothesized relationships of the dependent and independent variables, the CSA subscales underwent tests on its invariance across the six country samples using multi-group confirmatory factor analysis (MGCFA) with the six countries as groups.

6.2.1.1   Procedure Applied to Test for Measurement Invariance

The measurement of invariance of the CSA subscales was carried out in three subsequent stages employing the maximum likelihood method with AMOS 20.0. In the first stage, single country confirmatory factor analyses, comparable to the CFA described in Chapter 5.2.1, were conducted. In contrast to the CFA in Chapter 5, the construct validity of the three CSA subscales was tested separately for each subscale. This approach is frequently applied in cross-cultural studies (see e.g. Burton et al., 2000). This resulted in three separate CFA of the environmental CSA subscale, the economic CSA subscale, and the social CSA subscale, respectively, for each country sample. As suggested by Byrne (2001, pp. 82-83) and Byrne, Shavelson, and Muthén (1989, p. 459), a combination of multiple fit indices was consulted to evaluate the adequacy of the three CSA subscales, including the χ^2/degrees of freedom ratio, GFI, CFI, and RMSEA. Thereby, GFI and CFI values of .90 or above are considered indicative of good fit (Bagozzi & Yi, 1988; p. 79; Byrne, 2001, pp. 82-83). A general accepted threshold for the RMSEA is < .08 (Browne & Cudeck, 1993, p. 144) and $\chi^2/df < 3$ (Homburg & Giering, 1996, p. 13) are considered to be good fit. Similar to the CFA procedure in Chapter 5, several items of the original 30-item CSA scale had to be deleted over the course of this process. The reversed items were especially problematic. This result underlines Wong et al.'s (2003) findings of problems encountered when using mixed-worded scales in cross-national studies. Wong et al. revealed that applying measurement instruments with positively and negatively formulated items limits cross-cultural measurement invariance (p. 41).

In the second stage, to conduct MGCFA of the self-developed CSA scale across the six countries, a baseline measurement model, which provides adequate fit across all six country samples, was needed. Therefore, the factor structures of the CSA subscales from the individual country CFAs (first stage) were screened to identify those items that were shared by the different country samples. The common items were then used to establish a well-fitting baseline model for the MGCFA. The baseline model of the environmental CSA subscale included seven items. All items that were originally developed for this subscale were included, except for the negatively worded items (see Table 4.1 in Chapter 4 for an overview of the CSA items). The baseline model of the economic CSA subscale included four of the ten originally developed items for this subscale (item 6, 8, 10(R), 25). Finally, the baseline model of the social CSA subscale included four items (item 4, 17, 21, 24). Establishing the baseline model required some compromises with respect to the single country samples, resulting in the deletion of some items in the individual country samples. However, in order to run a MGCFA a common baseline model with an identical factor structure across the country samples is required.

Having derived the baseline model, a MGCFA procedure, as suggested by Steenkamp and Baumgartner (1998), was conducted to test for measurement invariance across countries. This procedure has been applied in various cross-national studies (see e.g. Engle, Schlaegel, & Delanoe, 2011; Hansen et al., 2011; Schumann et al., 2010; Wong et al., 2003). The MGCFA

tested three types of measurement invariance, which are: (i) *configural invariance*, (ii) *metric invariance*, and (iii) *scalar invariance* (Steenkamp & Baumgartner, 1998, p. 80). Configural invariance determines whether the items included in the CSA subscales have the same meaning to respondents in each country (Cheung & Rensvold, 2002, p. 235), which implies that the items of each subscale load on the same factor across the six countries (Singh, 1995, p. 605). To establish the second type of measurement invariance, metric invariance, factor loadings have to be similar across the country samples. Therefore, all factor loadings were constrained to be equal across the country samples ($\lambda^1 = \lambda^2 = \dots = \lambda^6$). Scalar invariance, the strongest form of measurement invariance, implies that the measurement intercepts are equal across the countries (Steenkamp & Baumgartner, 1998, p. 80). Therefore, all intercepts were constrained to be equal across the six countries ($\tau^1 = \tau^2 = \dots = \tau^6$). The three models of invariance were tested sequentially, starting with the configural invariance model. Thereafter, the progressively restrictive constraints on factor loadings and intercepts were added. Following suggestions from Byrne et al. (1989, p. 458) and Cheung and Rensvold (2002, pp. 234-235), we did not use the χ^2 difference test ($\Delta\chi^2$) to compare the configural and metric model and the metric and scalar model, as the χ^2 statistic and differences in χ^2 are dependent on N and, therefore, sensitive to large sample sizes. Accordingly, the difference in χ^2 is not a good test of model fit for the large sample sizes prevalent in this study. Instead, the difference in CFI (ΔCFI), as recommended by Cheung and Rensvold (2002), were used in the MGCFA to compare the three invariance models. The values of ΔCFI are independent of sample size. According to Cheung and Rensvold (2002), the null hypotheses of invariance should not be rejected if the difference in CFI between the models (configural versus metric and metric versus scalar) is smaller than or equal to .01 (p. 251).

6.2.1.2   Results of CFA and MGCFA

A summary of the results of the MGCFA and country by country CFA is provided in Table 6.2 for the environmental CSA subscale, in Table 6.3 for the economic CSA subscale, and in Table 6.4 for the social CSA subscale. The upper part of the three tables presents the fit indices of the single CFA on the baseline model for each individual country. For the environmental CSA subscale, the GFI ranged from .90 (Brazil) to .96 (Germany), the CFI ranged from .93 (Brazil) to .97 (Germany), and the RMSEA ranged from .08 (Germany) to .14 (Brazil). For the economic CSA subscale, the GFI ranged from .97 (India) to 1.00 (USA), the CFI ranged from .90 (India) to 1.00 (China, Russia, USA), and the RMSEA ranged from .00 (China, USA) to .16 (India). For the social CSA subscale, the GFI ranged from .94 (Brazil) to 1.00 (India, USA), the CFI ranged from .78 (Brazil) to 1.00 (India, USA), and the RMSEA ranged from .00 (India, USA) to .24 (Brazil). While the GFI and CFI support the adequacy of the CSA subscales for the Chinese, German, Russian, and U.S. samples, various RMSEAs were above the recommended threshold of .08. Moreover, the results of the fit indices reveal unsatisfactory model fits for the Brazilian sample concerning the environmental and social CSA

subscale, and for the Indian sample regarding the economic CSA subscale. This is, to some extent, due to the small sample sizes. Therefore, the subsequent regression results for the Brazilian and Indian samples have to be treated with caution.

The results of the MGCFA are reported in the lower part of the three tables. We first estimated the configural invariance model using the established baseline model. The results of the configural model of the environmental CSA subscale ($\chi^2_{(84)} = 199.48$, $\chi^2/df = 2.34$, GFI = .95, CFI = .96, RMSEA = .04), the economic CSA subscale ($\chi^2_{(12)} = 18.10$, $\chi^2/df = 1.51$, GFI = .99, CFI = .99, RMSEA = .02), and the social CSA subscale ($\chi^2_{(12)} = 39.36$, $\chi^2/df = 3.28$, GFI = .98, CFI = .96, RMSEA = .05) indicated a good model fit across the six countries. It can therefore be assumed that respondents from all six countries conceptualized the three dimensions of CSA in a similar way.

Second, we tested for metric invariance. The results of the metric model of the environmental CSA subscale ($\chi^2_{(114)} = 254.01$, $p < .001$, $\chi^2/df = 2.23$, GFI = .93, CFI = .95, RMSEA = .04, ΔCFI = .009) and the economic CSA subscale ($\chi^2_{(27)} = 35.24$, $\chi^2/df = 1.31$, GFI = .98, CFI = .99, RMSEA = .02, ΔCFI = .004) showed adequate model fit and provided evidence on full metric invariance for the environmental and economic CSA subscale. Full metric invariance for the social CSA subscale, consulting the difference in CFI criteria ($\chi^2_{(23)} = 61.69$, $p < .001$, $\chi^2/df = 2.68$, GFI = .97, CFI = .95, RMSEA = .04, ΔCFI = .015), was not attained. According to Steenkamp and Baumgartner (1998), at least the marker item and one additional item per factor need to be invariant with respect to their factor loadings and intercepts in order to be able to compare means across countries (p. 82). Therefore, we sequentially relaxed the constraints on two items (item 4 and item 24). The items were chosen based on their modification index (Steenkamp & Baumgartner, 1998, p. 81), and tested for partial metric invariance (Byrne et al., 1989, p. 460; Steenkamp & Baumgartner, 1998, p. 81). The ΔCFI results (ΔCFI = .012 = .01) for the relaxed model supported partial metric invariance of the social CSA subscale across the six countries.

Finally, we tested scalar invariance. The scalar model of the environmental CSA subscale ($\chi^2_{(119)} = 262.09$, $p < .001$, $\chi^2/df = 2.20$, GFI = .93, CFI = .95, RMSEA = .03, ΔCFI = .001) exhibited good model fit and provided support for full scalar invariance. Full scalar invariance for the economic CSA subscale ($\chi^2_{(32)} = 56.06$, $p < .001$, $\chi^2/df = 1.75$, GFI = .98, CFI = .96, RMSEA = .03, ΔCFI = .028) and for the social CSA subscale ($\chi^2_{(28)} = 81.45$, $p < .001$, $\chi^2/df = 2.91$, GFI = .96, CFI = .93, RMSEA = .04, ΔCFI = .020) was not achieved. Applying the same procedure as described for the partial metric invariance, we tested for partial scalar invariance, relaxing the constraints of items 6 and 8 for the economic CSA subscale, and items 4 and 24 for the social CSA subscale. For the economic CSA subscale, the difference of CFA (ΔCFI = .004) between the partial scalar invariance model and the full metric model supported partial scalar invariance. The ΔCFI results (ΔCFI = .015) for the social CSA sub-

scale did not support partial scalar invariance. Following suggestions from several authors (see e.g. Schumann et al., 2010, p. 460; Steenkamp & Baumgartner, 1998, p. 84; Birgelen et al., 2002), alternative fit indices (ΔGFI and ΔRMSEA) were consulted instead, which showed a smaller decrease in fit (ΔGFI = .007; ΔRMSEA = .001). Considering the differences in RMSEA and GFI provided support for partial scalar invariance of the social CSA subscale across the six countries.

Table 6.2: CFA and MGCFA of the Environmental CSA Subscale

	n	χ^2	df	χ^2/df	GFI	CFI	RMSEA	ΔCFI
CFA Results								
Brazil	94	38.63***	14	2.76	.903	.929	.137	-
China	174	33.55**	14	2.40	.951	.951	.090	-
Germany	302	41.49***	14	2.96	.962	.970	.081	-
India	84	22.37	14	1.60	.927	.930	.085	-
Russia	198	32.48**	14	2.32	.953	.958	.082	-
USA	177	30.80**	14	2.20	.953	.971	.083	-
MGCFA Results								
Full configural invariance	1029	199.48***	84	2.38	.948	.959	.037	-
Full metric invariance	1029	254.01***	114	2.23	.934	.950	.035	.009[a]
Full scalar invariance	1029	262.09***	119	2.20	.932	.949	.034	.001[b]

Note: CFA = confirmatory factor analysis, MGCFA = multi-group confirmatory factor analysis, χ^2 = chi-square, df = degrees of freedom, CFI = comparative fit index, GFI = goodness of fit index, RMSEA = root mean square error of approximation. *** $p < .001$. [a] Full configural invariance – full metric invariance. [b] Full metric invariance – full scalar invariance.

Table 6.3: CFA and MGCFA of the Economic CSA Subscale

	n	χ^2	df	χ^2/df	GFI	CFI	RMSEA	ΔCFI
CFA Results								
Brazil	94	2.24	2	1.12	.988	.973	.036	-
China	174	1.97	2	0.99	.994	1.000	.000	-
Germany	302	5.18	2	2.59	.992	.989	.073	-
India	84	5.98	2	2.99	.968	.895	.155	-
Russia	198	2.39	2	1.19	.994	.996	.031	-
USA	177	0.31	2	0.16	.999	1.000	.000	-
MGCFA Results								
Full configural invariance	1029	18.10	12	1.51	.992	.989	.022	-
Full metric invariance	1029	35.24	27	1.31	.984	.985	.017	.004[a]
Full scalar invariance	1029	56.06**	32	1.75	.975	.957	.027	.028[b]
Partial scalar invariance	1029	32.43	22	1.47	.985	.981	.022	.004[c]

Note: CFA = confirmatory factor analysis, MGCFA = multi-group confirmatory factor analysis, χ^2 = chi-square, df = degrees of freedom, CFI = comparative fit index, GFI = goodness of fit index, RMSEA = root mean square error of approximation. *** $p < .001$. [a] Full configural invariance – full metric invariance. [b] Full metric invariance – full scalar invariance. [c] Full metric invariance – partial scalar invariance.

Table 6.4: CFA and MGCFA of the Social CSA Subscale

	n	χ^2	df	χ^2/df	GFI	CFI	RMSEA	ΔCFI
CFA Results								
Brazil	94	12.90**	2	6.45	.941	.775	.240	-
China	174	9.56**	2	4.78	.974	.969	.148	-
Germany	302	8.69*	2	4.34	.986	.967	.105	-
India	84	0.06	2	0.03	1.000	1.000	.000	-
Russia	198	6.11*	2	3.06	.984	.949	.102	-
USA	177	2.00	2	1.00	.995	1.000	.003	-
MGCFA Results								
Full configural invariance	1029	39.36***	12	3.28	.982	.963	.047	-
Full metric invariance	1029	61.69***	23	2.68	.971	.948	.041	.015[a]
Partial metric invariance	1029	53.37***	17	3.14	.975	.951	.046	.012[b]
Full scalar invariance	1029	81.45***	28	2.91	.962	.928	.043	.020[c]
Partial scalar invariance	1029	69.34***	22	3.15	.968	.936	.046	.015[d]

Note: CFA = confirmatory factor analysis, MGCFA = multi-group confirmatory factor analysis, χ^2 = chi-square, df = degrees of freedom, CFI = comparative fit index, GFI = goodness of fit index, RMSEA = root mean square error of approximation. *** $p < .001$. [a] Full configural invariance – full metric invariance. [b] Full configural invariance – partial metric invariance. [c] Full metric invariance – full scalar invariance. [d] Partial metric invariance – partial scalar invariance.

Summarizing the findings, the environmental CSA subscale shows full configural, metric, and scalar invariance across the six countries. Hence, environmental CSA is conceptualized similarly across these six countries (Steenkamp & Baumgartner, 1998, p. 82). For the economic CSA subscale the tests for measurement invariance showed full configural and metric invariance, and partial scalar invariance across the six countries. Finally, the tests for measurement invariance showed full configural invariance and partial metric and scalar invariance for the social CSA subscale across the six countries. Thus, the CSA subscales can be meaningfully employed in the present cross-national study.

Factor loadings of the three CSA subscales for the pooled sample are presented in Table 6.5 on the following page. All the items of the pooled sample, except for item 10, had factor loadings that were above .50. All factor loadings were significant ($p < .001$). Table 6.6 reports estimates on the reliability and validity of the CSA subscales. The CSA subscales' Cronbach's alphas and composite reliabilities were good for the environmental CSA subscale ($\alpha = .86$, $\rho_c = .86$) and for the social CSA subscale ($\alpha = .70$, $\rho_c = .70$). Only the Cronbach's alpha of the economic CSA subscale ($\alpha = .63$, $\rho_c = .65$) was below the suggested threshold of .70 (Nunnally, 1978). However, the composite reliability and inter-item correlation were above the recommended thresholds of .60 (Bagozzi & Yi, 1988, p. 82) and .30 (Robinson et al., 1991, p. 13). The AVE of all three subscales did not exceed the required threshold of .50 (Fornell & Larker, 1981, p. 46).

The factor loadings of the individual country CFA (using the baseline model in each country) and reliability and validity measures (Cronbach's alpha, IIC, composite reliability and aver-

age variance extracted) are presented in the Appendix of Chapter 6 in Table 6.15 to Table 6.20. In the Brazilian sample, several factor loadings of the economic and social CSA subscales were statistically insignificant. Furthermore, several factor loadings in various individual country samples were below the threshold of .50. As mentioned earlier, the baseline model represents a compromise across all six countries. Therefore, some low factor loadings have to be accepted. Although some individual country CSA subscales exhibited reliability measures below the recommended thresholds, internal consistency was mostly acceptable in the individual country samples. Overall, the environmental subscale exhibits sound psychometric properties across all countries, whereas the economic and social CSA subscale require further refinement and validation in the future. The partly insufficient reliability and validity of the economic CSA scale is, indeed, surprising. In contrast to the items of the environmental and social CSA scale, the majority of items applied in the economic CSA scale were taken from well-established measurement scales (see Table 4.1 in Chapter 4). This underlines, once more, the importance of rigorous reliability and validity tests.

Table 6.5: Factor Loadings of CSA Subscales (Pooled Sample)

Constructs and items		Factor loadings
Environmental CSA		
3	implement programs to minimize the negative impact of organizational activities on the natural environment.	.63
9	foster programs to track and reduce its emissions.	.70
13	have factory programs to conserve water and energy.	.63
16	redesign and re-engineer products and services to make them more environmentally friendly.	.74
22	invest in "cleaner" technology.	.72
26	establish effective recycling and reuse systems.	.70
29	increase the use of regenerative energy sources.	.66
Economic CSA		
6	efficiently produce goods and services.	.64
8	pursue opportunities that provide the best rate of return.	.53
10(R)	disregard profit-maximization. *(reverse scored)*	.45
25	be concerned with improving economic performance.	.64
Social CSA		
4	take precautionary measures to ensure the safety of employees.	.62
17	implement strategies to manage the health of employees.	.71
21	implement internal policies that ensure equal opportunities in employees' promotion.	.60
24	support employees' lifelong learning by trainings and education.	.51

Note: Pooled sample $n = 1029$. Factor loadings are standardized and significant ($p < 0.001$).

Table 6.6: Reliability and Validity of CSA Subscales (Pooled Sample)

Subscale	1	2	3	α	ρ_c	IIC
Environmental CSA	.47			.86	.86	.47
Economic CSA	.05	.33		.63	.65	.31
Social CSA	.41	.18	.38	.70	.70	.37

Note: Pooled sample $n = 1029$. Values in the main diagonal are the average variance extracted (AVE) for each dimension, values below are squared correlations between the subscales. α = Cronbach's alpha. ρ_c = composite reliability. IIC = inter-item correlations.

6.2.2 Individual Cultural Values Scale

To measure Hofstede's cultural values, Yoo et al.'s (2011) 26-item CVSCALE was employed. A thorough explanation of the measurement instrument and the considerations behind its application is provided in Chapter 5.2.2. The five dimensions of the CVSCALE were tested for measurement invariance across the country samples. The procedure used to evaluate cross-cultural invariance was the same as in Chapter 6.2.1. Results of the individual country CFA and MCGFA across the samples are provided in Table 6.7.

Table 6.7: CFA and MGCFA of the CVSCALE Dimensions

Power distance	n	χ^2	df	χ^2/df	GFI	CFI	RMSEA	ΔCFI
CFA Results								
Brazil	94	4.54	5	0.91	.981	1.000	.000	-
China	174	12.34	5	2.47	.974	.970	.092	-
Germany	302	10.65	5	2.13	.985	.978	.061	-
India	84	9.44	5	1.89	.955	.970	.103	-
Russia	198	10.55	5	2.11	.978	.967	.075	-
USA	177	17.21	5	3.44	.961	.876	.118	-
MGCFA Results								
Full configural invariance	1029	64.76***	30	2.16	.975	.963	.034	-
Full metric invariance	1029	150.71***	50	3.01	.941	.893	.044	.070[a]
Partial metric invariance	1029	84.16***	40	2.10	.968	.953	.033	.010[b]
Full scalar invariance	1029	195.09***	55	3.55	.881	.850	.050	.043[c]
Partial scalar invariance	1029	95.90***	40	2.40	.963	.940	.037	.013[d]

Collectivism	n	χ^2	df	χ^2/df	GFI	CFI	RMSEA	ΔCFI
CFA Results								
Brazil	94	15.89	9	1.77	.949	.947	.091	-
China	174	15.83	9	1.76	.971	.964	.066	-
Germany	302	30.04***	9	3.34	.966	.954	.088	-
India	84	15.02	9	1.67	.944	.940	.090	-
Russia	198	34.91***	9	3.88	.941	.900	.121	-
USA	177	40.69***	9	4.52	.923	.842	.141	-
MGCFA Results								
Full configural invariance	1029	152.44***	54	2.82	.951	.927	.042	-
Full metric invariance	1029	251.63***	79	3.19	.921	.871	.046	.056[a]
Partial metric invariance	1029	179.52***	59	3.04	.943	.910	.045	.017[b]
Full scalar invariance	1029	264.28***	84	3.15	.916	.866	.046	.005[c]
Partial scalar invariance	1029	189.64***	64	2.96	.941	.906	.044	.004[d]

Masculinity	n	χ^2	df	χ^2/df	GFI	CFI	RMSEA	ΔCFI
CFA Results								
Brazil	94	0.43	2	0.22	.998	1.000	.000	-
China	174	5.01	2	2.51	.985	.975	.093	-
Germany	302	2.14	2	1.07	.996	.999	.015	-
India	84	6.19*	2	3.09	.963	.917	.159	-
Russia	198	12.65**	2	6.33	.972	.929	.164	-
USA	177	0.73	2	0.04	1.000	1.000	.000	-

MGCFA Results	n	χ^2	df	χ^2/df	GFI	CFI	RMSEA	ΔCFI
Full configural invariance	1029	26.52**	12	2.210	.988	.979	.034	-
Full metric invariance	1029	38.36**	17	2.256	.982	.970	.035	.009[a]
Full scalar invariance	1029	48.99**	22	3.017	.977	.962	.035	.008[c]

Uncertainty avoidance	n	χ^2	df	χ^2/df	GFI	CFI	RMSEA	ΔCFI
CFA Results								
Brazil	94	3.80	5	0.76	.983	1.000	.000	-
China	174	6.13	5	1.23	.987	.994	.036	-
Germany	302	4.58	5	0.92	.994	1.000	.000	-
India	84	3.31	5	0.66	.984	1.000	.000	-
Russia	198	14.76*	5	2.95	.970	.958	.100	-
USA	177	5.75	5	1.15	.987	.996	.029	-
MGCFA Results								
Full configural invariance	1029	38.34	30	1.28	.985	.993	.016	-
Full metric invariance	1029	101.46***	50	2.03	.962	.956	.032	.037[a]
Partial metric invariance	1029	48.29	35	1.38	.981	.989	.019	.004[b]
Full scalar invariance	1029	116.76***	55	2.12	.955	.947	.033	.009[c]
Partial scalar invariance	1029	70.16***	45	1.56	.973	.978	.023	.011[d]

Long-term orientation	n	χ^2	df	χ^2/df	GFI	CFI	RMSEA	ΔCFI
CFA Results								
Brazil	94	34.12***	9	3.79	.890	.787	.173	-
China	174	16.16	9	1.80	.970	.952	.068	-
Germany	302	24.49**	9	2.72	.973	.934	.076	-
India	84	18.55*	9	2.06	.933	.885	.113	-
Russia	198	51.23***	9	5.69	.911	.803	.154	-
USA	177	29.68***	9	3.30	.942	.796	.114	-
MGCFA Results								
Full configural invariance	1029	174.40***	54	3.23	.943	.866	.047	-
Full metric invariance	1029	253.35***	79	3.21	.924	.806	.046	.060[a]
Partial metric invariance	1029	186.32***	59	3.16	.942	.859	.046	.007[b]
Full scalar invariance	1029	277.00***	84	3.30	.917	.786	.047	.020[c]
Partial scalar invariance	1029	194.78	64	3.04	.942	.855	.045	0.04[d]

Note: CFA = confirmatory factor analysis, MGCFA = multi-group confirmatory factor analysis, χ^2 = chi-square, df = degrees of freedom, CFI = comparative fit index, GFI = goodness of fit index, RMSEA = root mean square error of approximation. *** $p < .001$, ** $p < .01$, * $p < .05$. [a] Full configural invariance – full metric invariance. [b] Full configural invariance – partial metric invariance. [c] Full metric invariance – full scalar invariance. [d] Partial metric invariance – partial scalar invariance.

We were able to establish full configural invariance for all five CVSCALE dimensions. The masculinity showed full metric and scalar invariance. Partial metric and partial scalar invariance was supported for power distance, uncertainty avoidance and long-term orientation. Some of the fit indices for the individual country samples are below (GFI, CFI) or above (χ^2/df, RMSEA) the suggested thresholds. This is, however, due to the fact that the baseline model used in the MGCFA needs to share the same factor pattern across countries.

The Cronbach's alphas, means, and standard deviations of the CVSCALE dimensions for the pooled sample are reported in Table 6.9 (p. 171). All CVSCALE subscales in the pooled sam-

ple exceeded the suggested threshold of .70 for Cronbach's alpha (Nunnally, 1978), except for the subscale long-term orientation ($\alpha = .66$). The reliability analysis of the six individual country samples provided the following ranges of Cronbach's alphas for the five dimensions: The Cronbach's alphas for power distance ranged from .53 (India) to .84 (India), for collectivism it ranged from .71 (USA) to .79 (Germany), for masculinity it ranged from .66 (Brazil) to .72 (Germany), for uncertainty avoidance it ranged from .64 (India) to .77 (China), and for long-term orientation it ranged from .55 (China) to .72 (Russia). In spite of a few Cronbach's alphas below the threshold of .70 (Nunnally, 1978), the CVSCALE dimensions mostly exhibit satisfactory internal consistency in all six countries. The Cronbach's alphas, means, and standard deviations of the CVSCALE dimensions of the individual country samples are reported in the Appendix of Chapter 6 in Table 6.21 to Table 6.26.

Table 6.8 presents the country sample mean scores of the five Hofstede dimensions from the present study and the national scores of the five Hofstede dimensions (marked with an *"H"*) obtained from Hofstede et al. (2010). In case of the Hofstede national scores, low scores stand for low values in the respective dimension, e.g. low power distance, low individualism (=collectivistic), etc. The same score scale applies in the case of the individual cultural values, except for the scores on individualism. The CVSCALE measured respondents' degree of collectivism instead of individualism. Therefore, high values indicate high collectivism.

Table 6.8: Individual and National Scores of the Five Hofstede Dimensions

	PD	PD-H	IND (COL)	IND-H	MAS	MAS-H	UA	UA-H	LTO	LTO-H
Brazil	2.43	69	4.59	38	3.05	49	5.72	76	6.02	44
China	2.95	80	4.28	20	4.09	66	5.02	30	5.33	87
Germany	3.00	35	4.62	67	3.48	66	5.17	65	5.29	83
India	3.37	77	4.80	48	3.77	56	4.75	40	5.25	51
Russia	2.73	93	3.64	39	3.80	36	4.36	95	5.48	81
USA	2.45	40	4.09	91	2.83	62	5.37	46	5.77	26
World Average	-	59	-	45	-	50		68		45

Note: PD = power distance, IND = individualism, MAS = masculinity, UA = uncertainty avoidance, LTO = long -term orientation, H = Hofstede scores. Low values for IND indicate high individualism. The Hofstede scores (H) were compiled from Hofstede et al. (2010), pp. 57-59, pp. 95-97, pp. 141-143, pp. 192-19, pp. 255-258, pp. 282-285.

As can be seen in Table 6.8, the obtained individual cultural value scores from the CVSCALE were, to some extent, contrary to the national scores reported in Hofstede's most recent book (Hofstede et al., 2010) and on his website. For example, in the present study all country samples scored rather low (below the midpoint) on the power distance dimension. This indicates that the surveyed business students were rather low in power distance. This might be due to the nature of the sample. According to the Hofstede's national scores, China is a highly collectivistic culture. Brazil and Russia are also found to be rather collectivistic when compared to individualistic societies such as the USA and Germany. Surprisingly, the respondents in the

Chinese, Russian and Brazilian sample of the present study were less collectivistic than the German sample. Another surprising finding in the present study is the contrast between Russian and U.S. uncertainty avoidance. The Russian sample was surprisingly low in uncertainty avoidance, whereas the U.S. sample was extremely high on uncertainty avoidance. Moreover, the Brazilian and U.S. sample scored very high on long-term orientation as opposed to very low national scores on long-term orientation. One possible explanation could be that both samples had slightly higher age averages than the other four country samples. It is possible that long-term orientation is positively correlated with age. However, the pairwise correlations of long-term orientation and age of the six samples did not provide evidence for this assumption. The findings of the present study, indeed, underscore the importance to collect individual data of the Hofstede dimensions for testing the relationships between cultural values and CSA. Employing the national scores would mean to apply stereotypes to the subsequent analysis.

6.2.3   Schwartz Value Survey

The third part of the questionnaire contained the Schwartz Value Survey to collect data on respondents' personal values (Schwartz, 1992, 2006, 2009). A detailed explanation of properties of the SVS and the reason why this measurement instrument was chosen for the present empirical study is provided in Chapter 5.2.3. Due to the reasons explained in Chapter 5, CFA and a test for measurement invariance across the six country samples were not conducted. Yet, according to Bilsky et al. 2011, the SVS has been tested sufficiently across cultures in the past (p. 759). For the pooled sample, the Cronbach's alphas, means, and standard deviations of Schwartz's four-higher order value dimensions are reported in Table 6.9 on the following page. All four higher-order dimensions of the SVS of the pooled sample and the individual country samples had Cronbach's alphas above the recommended threshold of .70 (Nunnally, 1978). The reliability analyses of the individual country samples obtained the following Cronbach's alpha: for self-transcendence (encompassing benevolence and universalism) it ranged from .76 (Russia) to .88 (India), the alpha for self-enhancement (power and achievement) ranged from .76 (Russia) to .84 (India), the alpha for conservation (conformity, tradition, security) ranged from .71 (Germany) to .87 (India), and the alpha for openness to change (self-direction, stimulation, hedonism) ranged from .75 (China, Germany, USA) to .89 (India). The SVS, therefore, exhibits good internal consistency in the six country samples. For each individual country, the Cronbach's alphas, means, and standard deviations for the higher-order dimensions of the SVS are to be found in the Appendix of Chapter 6 in Table 6.21 to Table 6.26.

Table 6.9: Descriptive Statistics and Pairwise Correlations (Pooled Sample)

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Environmental CSA	5.35	0.92	(.86)	.18	.63	-.24	.12	-.13	.19	.25	.39	-.05	.20	.11	-.03	.11	.10
2 Economic CSA	5.91	0.80	.22	(.63)	.33	-.12	-.02	.02	.19	.30	-.03	.09	-.03	.14	-.11	-.06	.00
3 Social CSA	5.82	0.83	.64	.42	(.70)	-.26	.07	-.07	.20	.30	.27	-.05	.16	.07	-.09	.12	.10
4 Power distance	2.82	1.06	-.23	-.16	-.26	(.72)	.16	.39	.00	-.10	-.14	.20	.07	-.01	.04	-.16	-.12
5 Collectivism	4.29	1.01	.13	-.01	.08	.17	(.78)	.12	.35	.06	.20	-.01	.21	.01	.26	-.18	-.04
6 Masculinity	3.51	1.39	-.14	.00	-.07	.41	.11	(.72)	.05	-.03	-.07	.14	.11	-.03	-.10	-.34	-.14
7 Uncertainty avoidance	5.04	0.93	.20	.21	.24	-.01	.37	.05	(.77)	.33	.19	.08	.18	.09	.23	-.12	.10
8 Long-term orientation	5.48	0.78	.25	.31	.32	-.09	.07	-.01	.34	(.66)	.17	.22	.22	.14	-.03	-.02	.13
9 Self-transcendence	4.41	0.97	.40	-.01	.28	-.13	.20	-.08	.22	.18	(.82)	.26	.67	.44	.11	.09	.06
10 Self-enhancement	3.99	1.14	-.06	.07	-.05	.22	-.03	.16	.07	.23	.25	(.79)	.47	.48	-.01	-.10	.06
11 Conservation	3.87	0.98	.21	-.04	.14	.10	.21	.10	.20	.23	.68	.47	(.79)	.32	.05	.00	.04
12 Openness to change	4.58	0.92	.13	.14	.09	.00	.00	-.02	.08	.16	.45	.47	.34	(.76)	.09	-.07	.06
13 Age	21.83	3.75	.02	-.06	-.03	-.02	.22	-.11	.22	.05	.13	-.02	.11	.05	-	-.24	.10
14 Gender	0.57	0.50	.12	-.07	.11	-.16	-.18	-.34	-.12	-.02	.10	-.09	.00	-.06	-.21	-	.00
15 CS course	0.31	0.46	.11	.02	.11	-.13	-.03	-.14	.11	.14	.05	.06	.04	.06	.10	.00	-

Note: Pooled sample *n* = 1029. Gender (female = 1) and course (yes=1) are dummy variables. Pearson correlation coefficients are below the diagonal and Spearman correlation coefficients are above the diagonal. All correlation coefficients above |.06| are significant at *p* < .05 (two-tailed). Reliability measures (Cronbach's alpha) for each study variable are displayed in parentheses on the diagonal.

6.2.4 Socio-demographic Variables

The last section of the questionnaire contained nine socio-demographic questions asking respondents' to indicate their gender, age, citizenship, citizenship at birth, level of degree program (bachelor, master, miscellaneous), academic major, participation at courses or trainings that dealt with CSR, business ethics, sustainability or related topics, stays abroad that exceeded one year, and work experience. The questions about citizenship and citizenship at birth served the purpose to filter transnational students. Age, gender, and CS course attendance were employed as control variables in the regression analyses. The selection of control variables was grounded on the literature review in Chapter 3.3.

6.3 Analyses and Results

Two research questions were posed at the beginning of this dissertation. The first one asked for the relevance business students ascribe to the three spheres of CS for the long-term success of companies. The second research question was concerned with the impact of individual cultural orientations and personal values on attitudes toward corporate sustainability. In order to answer the first research question, we calculated the means of the CSA subscales. Then mean difference tests between the three CSA subscales were performed to investigate whether the differences between the CS dimensions are statistically significant in each individual country and for the pooled sample. To answer the second research question on the relationship between culture, personal values and the three dimensions of CSA, separate linear hierarchical regression analyses for each CSA dimension were run. Several assumptions were tested prior to ensure valid regression analyses. Similar to Chapter 5.3, this subchapter will first explain the results of the tested assumptions that should be met in order to conduct meaningful regression analyses. Then we will deal with the relevance and mean differences of the CS spheres. Subsequently, the results of the hypotheses tests by means of regression analyses are reported.

6.3.1 Assumption Testing for Regression Analysis

Several assumptions should be met before running regression analyses (Backhaus et al. 2006, p. 79; Field, 2009, pp. 230-231). The assumptions for regression analysis were already discussed in detail in Chapter 5.3.1. Therefore, we will confine this chapter to reporting the results of assumption tests for the six country samples and the pooled sample. First, measuring the study variables at an interval level (dummy variables were measured at a categorical level) fulfilled the assumptions of the required variable types. The predictor variables also met the requirements of non-zero variance. Moreover, respondents were asked to fill out the questionnaire only once. Therefore, each data set was collected from separate individuals ensuring independence of dependent variables. Concerning the minimum sample size, rules of thumb recommend collecting at least 10 to 15 cases per predictor variable (Field, 2009, p. 222). With

nine predictor variables and three control variables in the present study, each country would require a minimum sample size of 120. The sample sizes of the Chinese, German, Russian and U.S. sample were well above 120. The Brazilian ($n = 94$) and Indian ($n = 84$) sample fell short of this requirement. As mentioned before, the small samples sizes of the Brazilian and Indian sample call for special attention. Results from those two samples should be treated with caution.

Moreover, linear regression analysis requires independent and dependent variables to be linearly related to each other. Scatter plots revealed no non-linear trends. All the independent variables showed either a positive or a negative relationship with the three dependent variables, or they appeared to be uncorrelated with the dependent variables. We also calculated pairwise correlation coefficients between the three CSA dimensions, Hofstede's five cultural dimensions, Schwartz's four higher-order personal value dimensions, and the control variables (age, gender, CS course). Table 6.9 (p. 171) reports the pairwise correlation coefficients between the dependent, independent and control variables, as well as the mean values, standard deviations, and Cronbach's alphas of the study variables for the pooled sample. The statistics for the individual country samples are presented in the Appendix of Chapter 6 in separate tables (Table 6.21-6.25). The pairwise correlations were used to examine the relationship between the study variables prior to the regression analyses. We included both the Pearson correlation coefficients and Spearman correlation coefficients to account for the possibility of non-parametric distributions. Comparing the two correlation coefficients revealed only minor differences regarding the relationships between the study variables. In particular, no change in sign of significant correlations between the Pearson and Spearman correlation coefficients was identified, which supports the assumption that possible not-normal distributions are unproblematic for the subsequent regression analyses. While distributions tend to be normal in large samples, according to the central limit theorem (Field, 2009, p.134), the comparison of the two correlation coefficients was especially important for the smaller samples.

To test for multicollinearity among the independent variables, for each individual country and for the pooled sample, the correlation matrices of the study variables were scanned for correlations above .90. In addition, the variance inflation factors, which should be below a threshold of 10, were calculated (Hair et al., 2006, p. 227). Both criteria indicated that multicollinearity should not be a problem. Pairwise correlations were well below the threshold of .90. However, some of the predictor variables showed some relatively high correlations, e.g. self-transcendence and conservation. As can be seen in Table 6.9, for example, the two dependent variables environmental CSA and social CSA had a moderately high correlation ($r = .64$). Regarding the predictor variables, conservation and self-transcendence ($r = .68$), conservation and self-enhancement ($r = .47$), openness to change and self-transcendence ($r = .45$) and openness to change and self-enhancement ($r = .47$) showed medium to high correlations in the pooled sample. One explanation of the high correlations of

some of the higher-order Schwartz values types can be explained with their circular structure (see Chapter 3.2.2). Concerning the individual country samples, the Brazilian, Chinese and Indian sample showed some very high correlations among the study variables. However, the pairwise correlations were below .90. Again, most of the correlations can be explained by the Schwartz value typology. Although not as high as in the other cases, the German, Russian, and U.S. samples also showed significant correlations between the higher order Schwartz value types that are, according to the theoretical model, close to each other on the circular structure. The very high correlations in the Indian sample found reflection in its VIF. In detail, the maximum VIF for the individual countries and the pooled sample were as follows: for Brazil the $VIF_{max} = 2.72$, for China the $VIF_{max} = 3.13$, for Germany the $VIF_{max} = 2.04$, for India the $VIF_{max} = 6.25$, for Russia the $VIF_{max} = 1.81$, for the USA the $VIF_{max} = 2.10$, and for the pooled sample the $VIF_{max} = 2.64$. Concluding, none of the individual country sample and pooled sample VIFs were larger than 10.

Independence of residual terms (autocorrelation) was tested with the Durban-Watson test. A value of 2 on the Durbin Watson test indicates that residuals are uncorrelated. The values of the test were close to 2 for all individual country samples and the pooled sample. According to the investigated regression plots of standardized residuals as a function of standardized predicted values, histograms, and the normal probability plots of the residuals, the residuals followed a normal distribution and had a constant variance (homoscedasticity).

6.3.2   Relevance of Corporate Sustainability Spheres in Each Country

One of the research questions posed at the beginning of the dissertation was concerned with the business students' attitudes concerning the importance of the three spheres of corporate sustainability for the long-term success of companies. The self-developed CSA scale aimed at answering the research question by ascertaining whether business students attribute the same importance to all three spheres of corporate sustainability. As can be seen in Table 6.10, the three CS dimensions were evaluated well above the midpoint (3.5) across all individual country samples. Thus, it can be inferred that respondents, independent of country-of-origin, on average attribute high importance not only to a corporation's economic sustainability, but also to its social and environmental sustainability.

In addition, a series of paired-sample t-tests and Wilcoxon signed rank tests (non-parametric test) was performed to test for mean differences between the three CSA dimensions in each individual country sample and the pooled sample. The results of these tests in Table 6.11 show that respondents of the German and Russian samples rated economic CS significantly higher than social CS and social CS significantly higher than environmental CS. In the Brazilian and U.S. samples, no significant difference was observed in the relevance attributed to economic and social CS. Hence, Brazilian and U.S. respondents attached equal importance to

economic and social CS for a company's long-term viability. However, environmental CS was rated significantly lower than the other two CS dimensions in the Brazilian and U.S. samples. In contrast, the Chinese sample evaluated social CS highest, followed by economic and environmental CS. All mean differences in the Chinese sample were significant. Solely the respondents of the Indian sample put, on average, equal importance to all three spheres of CS.

Table 6.10: CSA Subscale Means and Standard Deviations by Country

Countries/Dimension	Environmental CSA		Economic CSA		Social CSA	
	M	*SD*	*M*	*SD*	*M*	*SD*
Brazil	5.70	(1.09)	6.06	(0.70)	6.04	(0.71)
China	5.56	(0.90)	5.70	(0.78)	5.94	(0.94)
Germany	5.08	(0.89)	5.93	(0.83)	5.65	(0.81)
India	5.39	(0.87)	5.41	(0.87)	5.49	(0.96)
Russia	5.30	(0.90)	6.20	(0.72)	5.96	(0.72)
USA	5.47	(0.84)	5.94	(0.69)	5.88	(0.76)
Pooled sample	5.35	(0.92)	5.91	(0.80)	5.82	(.083)

Note: Brazilian sample $n = 94$. Chinese sample $n = 174$. German sample $n = 302$. Indian sample $n = 84$. Russian sample $n = 198$. U.S. sample $n = 198$. Pooled sample $n = 1029$. M = mean, SD = standard deviation

Table 6.11: Mean Differences between CSA Dimensions by Country

Countries	Economic/environmental		Economic/social		Social/environmental	
	T value	Z value	T value	Z value	T value	Z value
Brazil	2.83**	-2.28*	0.22	-0.23	3.71***	3.21***
China	1.96[†]	-1.81[†]	-3.87***	-4.16***	8.17***	-7.72***
Germany	12.50***	-10.65***	5.54***	-5.10***	11.91***	-10.37***
India	0.27	-0.17	-0.77	-1.19	1.30	-2.74[†]
Russia	12.31***	-9.62***	4.00***	-3.92***	13.60***	-10.32***
USA	7.10***	-6.56***	0.94	-1.22	7.90***	-7.22***
Pooled sample	16.60***	-15.07***	3.38**	-2.94**	19.86***	-18.14***

Note: Brazilian sample $n = 94$. Chinese sample $n = 174$. German sample $n = 302$. Indian sample $n = 84$. Russian sample $n = 198$. U.S. sample $n = 198$. Pooled sample $n = 1029$. Dependent t-test. Wilcoxon signed rank test.
[†] $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$.

6.3.3 Hypotheses Testing

After investigating the attitudes toward the importance of the three spheres of CS, this subchapter attempts to answer the second research question posed in the introduction of the dissertation: whether and how culture and personal values affect the attitudes toward CS. To test the hypothesized relationships stated in Chapter 3, OLS hierarchical regressions for each CSA dimension were conducted, controlling for age, gender, and CS course. Tables 6.12, Table 6.13, and Table 6.14 (pp. 177-179) present the regression results of the individual country samples and the pooled sample for each CSA dimension.

Hierarchical regression analyses were undertaken in which respondents' environmental, economic, and social CSA were regressed separately on three blocks of control variables and predictor variables. The first block included the control variables of age, gender, and CS course (Model 1). The second block of predictor variables consisted of the five Hofstede dimensions (Model 2), and the third block included the four higher-order Schwartz values (Model 3). Moreover, for the pooled sample a fourth block was added, consisting of country dummy variables (Model 4). Subsequently, each block was added to the regression model, starting with the first block of control variables. In contrast to Chapter 5 (Table 5.16-5.18), we refrained from providing tables that display the different stages of the hierarchical regression analyses, as this would have meant another 21 tables (three dependent variables times the number of samples). Instead the R squared, adjusted R squared, and the F-value for the separate stages are reported below each regression block in Table 6.12 to Table 6.14.

As can be seen in Table 6.12, Table 6.13, and Table 6.14, the control variables of age, gender, and CS course attendance accounted for a very small amount of explained variance in the three models in all individual country samples and the pooled sample. The adjusted R^2 for Model 1 ranged between .00 and .04. The second block of the five Hofstede dimensions explained a quite large degree of variance in the three CSA models. The change in R^2 from the first to the second model, which includes the control variables and the Hofstede dimensions, ranged for the environmental CSA model from .11 (Germany) to .29 (China), for the economic CSA model from .12 (Russia) to .25 (Brazil), and for the social CSA model from .15 (USA) to .32 (China). Adding the third block of variables again increased the R^2 values in the individual country samples and the pooled sample. The change in R^2 ranged from .06 (Brazil) to .14 (USA) in the environmental CSA model, from .03 (USA) to .15 (Brazil) in the economic CSA model, and from .04 (Russia, pooled sample) to .07 (India, USA) in the social CSA model. For the pooled sample, a fourth block of country dummies was added, which increased the explained variance.

The reported unstandardized beta coefficients, standard errors and significance levels for the predictor variables in the Tables 6.12 to 6.14 refer to the third model, which included all blocks of control and predictor variables simultaneously, in case of the individual country samples. For the pooled sample, the unstandardized beta coefficients, standard errors and significance levels refer to the fourth model, which in addition includes the country dummies. Both model 3 and model 4 were statistically significant according to the F-test. Following suggestions from Singh (1995), we reported the unstandardized coefficients. Although using unstandardized coefficients hampers the comparability of the impact of individual cultural orientations and personal values on CSA (both scales employ different scale points), it is preferable for cross-cultural studies as unstandardized coefficients allow for a comparison of regression coefficients across samples (pp. 598-600).

Table 6.12: Regression Analysis of Environmental CSA

Variable	Brazil	China	Germany	India	Russia	USA	Pooled Sample
Intercept	1.41 (1.31)	1.73 (1.39)	3.39 (.85)***	4.67 (1.23)***	3.31 (1.44)*	2.75 (.83)**	2.71 (.32)***
Controls							
Age	.00 (.02)	.02 (.06)	-.01 (.03)	-.10 (.05)*	.02 (.08)	.00 (.01)	.00 (.01)
Gender	.24 (.27)	.36 (.14)*	-.03 (.10)	.00 (.18)	-.03 (.15)	-.19 (.14)	.05 (.06)
CS Course	.16 (.23)	.06 (.13)	.22 (.12)†	.19 (.22)	.04 (.15)	.06 (.11)	.11 (.06)†
R^2	.05	.02	.05	.03	.01	.01	.03
Adjusted R^2	.02	.00	.04	.00	.00	.00	.03
F	1.51	1.23	4.84**	.67	.92	.44	9.75***
Cultural orientations							
Power distance	.06 (.14)	-.24 (.07)**	-.05 (.05)	.-04 (.09)	-.11 (.06)†	-.12 (.08)	-.09 (.03)**
Collectivism	.11 (.11)	.07 (.08)	.09 (.06)	.19 (.11)†	.05 (.07)	.10 (.07)	.08 (.03)**
Masculinity	-.14 (.11)	.20 (.06)**	-.09 (.04)**	.04 (.10)	-.10 (.05)*	-.08 (.06)	-.04 (.02)†
Uncertainty avoidance	.34 (.15)*	.08 (.08)	.08 (.06)	-.10 (.12)	.06 (.07)	.17 (.08)*	.11 (.03)**
Long-term orientation	.16 (.18)	.30 (.10)**	.12 (.07)†	.38 (.12)**	.23 (.07)**	.14 (.10)	.21 (.04)***
R^2 (ΔR^2)	.21 (.16)	.31 (.29)	.16 (.11)	.30 (.28)	.14 (.12)	.17 (.16)	.15 (.13)
Adjusted R^2	.13	.28	.14	.23	.10	.13	.15
F	2.81**	9.25***	6.93***	4.10***	3.73***	4.18***	23.05***
Personal values							
Self-transcendence	.19 (.17)	.27 (.11)*	.45 (.08)***	.10 (.17)	.27 (.09)**	.46 (.10)***	.34 (.04)***
Self-enhancement	-,18 (.12)	-.22 (.07)**	-.12 (.05)**	-.08 (.13)	-.11 (.07)†	-.08 (.07)	-.15 (.03)***
Conservation	.10 (.15)	-.01 (.12)	-.17 (.08)**	-.29 (.19)	.02 (.09)	-.18 (.09)†	-.07 (.04)†
Openness to change	.07 (.15)	.07 (.09)	.00 (.06)	.37 (.15)**	-.02 (.08)	.05 (.09)	.04 (.04)
R^2 (ΔR^2)	.27 (.06)	.38 (.07)	.28 (.13)	.39 (.09)	.22 (.09)	.31 (.14)	.26 (.11)
Adjusted R^2	.16	.33	.25	,29	.17	.26	.25
F	2.50**	8.12***	9.56***	3.82***	4.39***	6.06***	29.82***
Country dummies							
Brazil							.18 (.10)†
China							.37 (.09)***
India							.40 (.11)***
Russia							.41 (.09)***
USA							.13 (.08)
R^2 (ΔR^2)							.28 (.02)
Adjusted R^2							.27
F							23.36***
N	94	174	302	84	198	177	1029

Note: OLS regression results. Dependent variable: Environmental CSA. Coefficients are unstandardized. Standard errors are in parentheses. Gender (female = 1) and CS Course (yes = 1) are dummy variables. $^\dagger p < .1$; $^* p < .05$; $^{**} p < .01$; $^{***} p < .001$.

Table 6.13: Regression Analysis of Economic CSA

Variable	Brazil	China	Germany	India	Russia	USA	Pooled Sample
Intercept	3.67 (.76)***	1.45 (1.25)	4.24 (.81)***	5.86 (1.34)***	4.14 (1.21)**	1.68 (.70)*	3.88 (.29)***
Controls							
Age	.00 (.01)	.07 (.05)	-.01 (.02)	-.10 (.06)†	.05 (.06)	.01 (.01)	.00 (.01)
Gender	.02 (.16)	-.11 (.13)	-.39 (.10)***	-.28 (.20)	.07 (.13)	.11 (.11)	-.15 (.05)**
CS Course	-.20 (.13)	-.17 (.12)	-.19 (.11)†	.25 (.24)	-.04 (.13)	.24 (.10)*	-.02 (.05)
R^2	.01	.02	.05	.06	.00	.04	.01
Adjusted R^2	.00	.00	.04	.02	.00	.03	.00
F	.19	.94	5.15**	1.60	.02	2.49†	3.73*
Cultural orientations							
Power distance	-.11 (.08)	-.16 (.06)*	-.08 (.05)	-.11 (.10)	-.11 (.05)*	.01 (.07)	-.11 (.03)***
Collectivism	.01 (.06)	-.06 (.07)	.10 (.05)†	.10 (.12)	-.03 (.05)	-.06 (.06)	.00 (.03)
Masculinity	-.11 (.06)†	.04 (.05)	-.12 (.04)**	.03 (.11)	.08 (.04)*	.08 (.05)	.00 (.02)
Uncertainty avoidance	.37 (.09)***	.22 (.08)**	.27 (.06)***	.03 (.13)	.01 (.06)	.15 (.07)*	.18 (.03)***
Long-term orientation	.15 (.10)	.19 (.09)*	.27 (.07)***	.23 (.13)†	.21 (.06)***	.38 (.08)***	.24 (.03)***
R^2 (ΔR^2)	.25 (.25)	.26 (.24)	.21 (.16)	.21 (.15)	.12 (.12)	.23 (.19)	.15 (.14)
Adjusted R^2	.18	.22	.19	.12	.08	.20	.14
F	3.63**	7.17***	9.71***	2.42*	3.11**	6.41***	22.56***
Personal values							
Self-transcendence	-.39 (.10)***	.14 (.10)	-.19 (.07)**	-.20 (.18)	.10 (.08)	.12 (.08)	-.04 (.04)
Self-enhancement	.02 (.07)	-.02 (.06)	.00 (.05)	.24 (.14)†	-.01 (.05)	.02 (.06)	.02 (.03)
Conservation	.11 (.09)	.01 (.11)	-.08 (.08)	-.22 (.21)	-.18 (.07)*	-.03 (.08)	-.05 (.04)
Openness to change	.27 (.09)*	.15 (.08)†	.12 (.06)*	.25 (.16)	.07 (.06)	.05 (.08)	.13 (.03)***
R^2 (ΔR^2)	.40 (.15)	.33 (.07)	.26 (.05)	.28 (.07)	.15 (.04)	.26 (.03)	.18 (.03)
Adjusted R^2	.31	.28	.23	.16	.10	.21	.17
F	4.52***	6.50***	8.40***	2.29*	2.77**	4.88***	18.52***
Country dummies							
Brazil							-.20 (.09)*
China							-.11 (.08)
India							-.37 (.10)***
Russia							.37 (.08)***
USA							-.19 (.08)*
R^2 (ΔR^2)							.23 (.05)
Adjusted R^2							.22
F							17.56***
N	94	174	302	84	198	177	1029

Note: OLS regression results. Dependent variable: Economic CSA. Coefficients are unstandardized. Standard errors are in parentheses. Gender (female = 1) and CS Course (yes = 1) are dummy variables. $^\dagger p < .1$; $^* p < .05$; $^{**} p < .01$; $^{***} p < .001$.

Table 6.14: Regression Analysis of Social CSA

Variable	Brazil		China		Germany		India		Russia		USA		Pooled Sample	
Intercept	2.97	(.80)***	2.33	(1.43)	2.56	(.78)**	4.65	(1.45)**	3.41	(1.16)**	3.05	(.78)***	3.10	(.29)***
Controls														
Age	.00	(.01)	.00	(.06)	.01	(.02)	-.10	(.06)†	.06	(.06)	.00	(.01)	.00	(.01)
Gender	.24	(.17)	.25	(.15)†	-.04	(.10)	.16	(.21)	-.10	(.12)	-.07	(.13)	.04	(.05)
CS Course	.09	(.14)	.08	(.13)	.12	(.11)	.63	(.26)*	.02	(.12)	.16	(.11)	.13	(.05)*
R^2	.04		.03		.02		.07		.00		.02		.02	
Adjusted R^2	.01		.01		.01		.03		.00		.00		.02	
F	1.15		1.51		2.39†		1.92		.11		1.15		8.17***	
Cultural orientations														
Power distance	-.11	(.09)	-.22	(.07)**	-.12	(.05)**	.10	(.11)	-.17	(.05)***	-.11	(.08)	-.14	(.03)***
Collectivism	.02	(.07)	-.03	(.08)	.13	(.05)**	.15	(.13)	.01	(.05)	.07	(.07)	.05	(.03)*
Masculinity	.00	(.07)	.07	(.06)	-.05	(.04)	.07	(.12)	.01	(.04)	-.05	(.06)	.00	(.02)
Uncertainty avoidance	.28	(.09)**	.24	(.09)**	.20	(.06)**	-.11	(.14)	.10	(.06)†	.17	(.08)*	.17	(.03)***
Long-term orientation	.16	(.11)	.33	(.10)**	.24	(.06)***	.40	(.14)**	.23	(.06)***	.19	(.09)*	.25	(.03)***
R^2 (ΔR^2)	.28 (.24)		.35 (.32)		.22 (.19)		.23 (.17)		.19 (.19)		.17 (.15)		.20 (.18)	
Adjusted R^2	.21		.31		.20		.15		.16		.13		.19	
F	4.06***		10.91***		10.10***		2.85**		5.69***		4.14***		32.01***	
Personal values														
Self-transcendence	.13	(.11)	.31	(.12)**	.11	(.07)	.30	(.20)	.19	(.07)**	.23	(.09)*	.18	(.04)***
Self-enhancement	-.05	(.07)	-.15	(.07)*	-.16	(.05)**	-.09	(.15)	-.04	(.05)	-.12	(.07)†	-.11	(.03)***
Conservation	.13	(.09)	-.02	(.12)	.02	(.07)	-.43	(.23)†	-.10	(.07)	.03	(.09)	-.02	(.04)
Openness to change	-.08	(.09)	.01	(.09)	.13	(.06)*	.22	(.18)	.00	(.06)	.04	(.08)	.05	(.03)
R^2 (ΔR^2)	.34 (.07)		.40 (.05)		.27 (.05)		.30 (.07)		.23 (.04)		.23 (.07)		.24 (.04)	
Adjusted R^2	.25		.35		.24		.18		.18		.18		.23	
F	3.52***		8.87***		8.84***		2.55**		4.66***		4.17***		26.96***	
Country dummies														
Brazil													-.05	(.09)
China													.23	(.08)**
India													-.03	(.10)
Russia													.47	(.08)***
USA													-.04	(.08)
R^2 (ΔR^2)													.27 (.03)	
Adjusted R^2													.26	
F													22.39***	
N	94		174		302		84		198		177		1029	

Note: OLS regression results. Dependent variable: Social CSA. Coefficients are unstandardized. Standard errors are in parentheses. Gender (female = 1) and CS Course (yes = 1) are dummy variables. † $p < .1$; * $p < .05$; ** $p < .01$; *** $p < .001$.

In general, individual cultural orientations and personal values have the ability to explain between 16 percent (Brazil) and 33 percent (China) of the variance in respondents' environmental CSA, between 10 percent (Russia) and 31 percent (Brazil) of the variance in respondents' economic CSA, and between 18 percent (India, Russia, USA) and 35 percent (China) of the variance in respondents' social CSA. Four countries had an adjusted R^2 of .25 or above in the environmental CSA model. In the economic CSA model, four countries had an adjusted R^2 above .20 and three countries had an adjusted R^2 above .20 in the social CSA model. The results, therefore, underline the impact of personal values and individual cultural orientations on CS attitudes. The next paragraphs will report detailed findings on the hypothesized relationships.

Control Variables

As can be seen in the final regression models for each CSA subscale (Tables 6.12-6.14), respondents' age had no significant effect on environmental, economic and social CSA, with the exception of India. For the Indian sample, we found a marginally significant negative effect of age on environmental, economic and social CSA (at the 10 percent level). That is, in the Indian sample older respondents had a less favorable attitude toward all three aspects of corporate sustainability. Regarding gender, a significant positive effect on environmental CSA was found in the Chinese sample ($\beta = .36$, $p < .05$). That is, female Chinese attached higher importance on environmental sustainability for the long-term success of companies. Moreover, a strong significant negative effect of gender on economic CSA was found in the German and the pooled sample ($\beta = -.39$, $p < .001$). German female students had a less favorable attitude toward economic CSA than their male fellow students. The last control variable, CS course attendance, had a marginally significant positive effect on environmental CSA in the German ($\beta = .22$, $p < .10$) and the pooled sample ($\beta = .11$, $p < .10$), and on social CSA in the Indian ($\beta = .63$, $p < .05$) and the pooled sample ($\beta = .13$, $p < .05$). For economic CSA, CS course attendance provided ambiguous results. In the German sample, respondents who had participated in CS courses exhibited a significantly less favorable attitude toward economic CS ($\beta = -.19$, $p < .10$), whereas the opposite was the case for the U.S. sample ($\beta = .24$, $p < .05$).

Individual cultural orientations

Kirkman et al. (2006) pointed out that only little research has been conducted on the effect of cultural values across countries. In fact, cultural values might have completely different effects on outcomes in different countries (p. 309). In order to investigate whether the Hofstede dimensions have the same positive or negative impact on respondents' CSA across the six countries, we did not only conduct a regression analysis of the pooled sample, but also performed analyses for each individual country.

For the Hofstede dimension of *power distance*, we did not find contrary results across the countries. Respondents scoring higher on Hofstede's power distance dimension reported significantly less favorable attitudes toward environmental CSA in the Chinese ($\beta = -.24$, $p < .01$), Russian ($\beta = -.11$, $p < .10$), and pooled sample ($\beta = -.09$, $p < .01$) as well as less favorable attitudes toward social CSA in China ($\beta = -.22$, $p < .01$), Germany ($\beta = -.12$, $p < .01$), Russia ($\beta = -.17$, $p < .001$), and the pooled sample ($\beta = -.14$, $p < .001$). Thus, H1a and H1b can be supported for these countries. Moreover, high power distance was a significant negative determinant on economic CSA in the Chinese ($\beta = -.16$, $p < .05$), Russian ($\beta = -.11$, $p < .05$), and pooled sample ($\beta = -.11$, $p < .001$).

Students in the Indian sample ($\beta = .19$, $p < .10$) and pooled sample ($\beta = .08$, $p < .01$) scoring higher on *collectivism* exhibited a more favorable attitude toward environmental CSA. Moreover, the German sample reported a significant positive effect of higher collectivism on economic ($\beta = .10$, $p < .10$) and social CSA ($\beta = .13$, $p < .01$). The last effect was also found for the pooled sample ($\beta = .05$, $p < .05$). The other country samples showed a non-significant trend in the predicted direction. That is, the effect of collectivism on environmental and social CSA was positive, however, non-significant. Thus, H2a and H2b found only limited support.

Regression results for Hofstede's *masculinity versus femininity* dimension were ambiguous. Chinese respondents scoring high on masculine orientation had a significantly more positive attitude toward environmental sustainability ($\beta = .20$, $p < .01$), while the German ($\beta = -.09$, $p < .01$), Russian ($\beta = -.10$, $p < .05$), and pooled sample ($\beta = -.04$, $p < .10$) showed the opposite relationship. For economic CSA, masculinity was a negative determinant in the Brazilian ($\beta = -11$, $p < .10$) and German sample ($\beta = -.12$, $p < .01$), whereas it was a positive determinant in the Russian sample ($\beta = .08$, $p < .05$). The effect of masculinity on social CSA was not significant in any country sample. Taking the findings into consideration, H3a only finds support in the German, Russian, and pooled sample, H3b can be rejected for all samples, and H3c finds only support in the Russian sample.

In the Brazilian ($\beta = .34$, $p < .05$), U.S. ($\beta = .17$, $p < .05$) and pooled sample ($\beta = .11$, $p < .01$), respondents who scored high on *uncertainty avoidance* hold a significantly more favorable attitude toward environmental CS. With exception of India, the other countries reported a positive, yet non-significant, effect of higher uncertainty avoidance on environmental CSA. Thus, H4a finds limited support. Strong evidence for the hypothesized positive relationship between uncertainty avoidance and social CSA was found (H4b). In all country samples, with the exception of India, higher uncertainty avoidance was a significant positive determinant on social CSA; Brazil ($\beta = .28$, $p < .01$), China ($\beta = .23$, $p < .01$), Germany ($\beta = .20$, $p < .01$), Russia ($\beta = .10$, $p < .10$), the USA ($\beta = .17$, $p < .05$) and the pooled sample ($\beta = .17$, $p < .001$). Moreover, economic CSA was significantly positively affected by higher uncertainty avoidance in

Brazil ($\beta = .37$, $p < .001$), China ($\beta = .22$, $p < .01$), Germany ($\beta = .27$, $p < .001$), the USA ($\beta = .15$, $p < .001$), and the pooled sample ($\beta = .18$, $p < .001$).

Finally, the fifth Hofstede dimension *long-term orientation* had a strong significant positive effect on respondents' attitudes toward environmental CSA in China ($\beta = .30$, $p < .01$), Germany ($\beta = .12$, $p < .10$), India ($\beta = .38$, $p < .01$), Russia ($\beta = .23$, $p < .01$), and the pooled sample ($\beta = .21$, $p < .001$) and it had a strong significant positive effect on economic and social CSA in all countries, except of Brazil (see Table 6.13 and Table 6.14). Therefore, H5a, H5b and H5c find strong empirical support.

Personal values

Concerning the four higher-order dimensions of Schwartz's personal values, s*elf-transcendence* was a positive determinant for environmental CSA in China ($\beta = .27$, $p < .05$), Germany ($\beta = .45$, $p < .001$), Russia ($\beta = .27$, $p < .01$), USA ($\beta = .46$, $p < .001$), and the pooled sample ($\beta = .34$, $p < .001$), as well as for social CSA in China ($\beta = .31$, $p < .01$), Russia ($\beta = .19$, $p < .01$), the USA ($\beta = .23$, $p < .05$), and the pooled sample ($\beta = .18$, $p < .001$). Thus, H6a finds strong empirical support across the country samples, while H6b is only partially supported. Moreover, in India ($\beta = -.39$, $p < .001$) and Germany ($\beta = -.19$, $p < .01$), respondents scoring higher on self-transcendence had a significantly less favorable attitude toward economic CSA.

In contrast, students scoring higher on *self-enhancement* values had a significantly less favorable attitude toward environmental CSA in China ($\beta = -.22$, $p < .01$), Germany ($\beta = -.12$, $p < .01$), Russia ($\beta = -.11$, $p < .10$), and the pooled sample ($\beta = -.15$, $p < .001$), and a less favorable attitude toward social CSA in China ($\beta = -.15$, $p < .05$), Germany ($\beta = -.16$, $p < .01$), the USA ($\beta = -.12$, $p < .10$), and the pooled sample ($\beta = -.11$, $p < .001$). Hence, H7a and H7b are supported in these countries. In addition, self-enhancement was found to be a marginally significant positive determinant on Indian respondents' economic CSA ($\beta = .24$, $p < .10$).

Conservation values were found to have significant negative effects on environmental CSA in Germany ($\beta = -.17$, $p < .01$), the USA ($\beta = -.18$, $p < .10$), and the pooled sample ($\beta = -.07$, $p < .10$), and marginally significant negative effect on social CSA in India ($\beta = -.43$, $p < .10$). Thus, H8a and H8b are partially supported. In addition, in the Russian sample, conservation values had a significant negative impact on respondents' attitudes toward economic sustainability ($\beta = -.18$, $p < .05$).

Finally, *openness to change* was found to have a positive significant effect on environmental CSA in India ($\beta = .37$, $p < .01$), on social CSA in Germany ($\beta = .13$, $p < .05$), and on economic CSA in Brazil ($\beta = .27$, $p < .05$), China ($\beta = .15$, $p < .10$), Germany ($\beta = .12$, $p < .05$), and the pooled sample ($\beta = .13$, $p < .001$).

The findings on the country dummies in the pooled sample also revealed significant country effects on all three CSA dimensions, which are not accounted for by the other predictor variables. As shown in Table 6.12, the country dummies for Brazil ($\beta = .18$, $p < .10$), China ($\beta = .37$, $p < .001$), India ($\beta = .40$, $p < .001$), and Russia ($\beta = .41$, $p < .001$) are significant for environmental CSA. For the economic CSA model, the Brazilian ($\beta = -.20$, $p < .05$), Indian ($\beta = -.37$, $p < .001$), Russian ($\beta = .37$, $p < .001$), and U.S. ($\beta = -.19$, $p < .05$) country dummies turned out to be significant. Finally, for the social CSA model, the country dummies for China ($\beta = .23$, $p < .01$) and Russia ($\beta = .47$, $p < .001$) had a significant effect on CS attitudes in the pooled sample. Thus, we observe differences in CSA attitudes in the pooled sample that are not explained by individual cultural orientations, personal values or the three control variables.

Summarizing, the multi-country study in the BRIC countries, Germany, and USA examined business students' attitudes toward the importance of the three aspects of CS on the long-term success of companies. After having established measurement invariance of the three CSA subscales, mean difference tests were performed to test whether the respondents attributed equal importance to the three CS dimensions. Only the Indian sample was found to evaluate all three CS aspects equally. Furthermore, the study investigated, by means of regression analysis, whether and to which extent the suggested independent variables of individual cultural orientations and personal values can be used to predict attitudes toward CS within the six countries and the pooled sample. The regression results of the three CSA subscale models provide partial support for the hypothesized relationships. A final synthesis of the study findings is provided in Chapter 7.

Appendix to Chapter 6

Table 6.15: CFA and Reliability Measures of the CSA Subscales (Brazilian Sample)

Constructs and items	Factor loadings
Environmental CSA (α = .88, IIC = .54, ρ_c = .89, AVE = .55)	
3 implement programs to minimize the negative impact of organizational activities on the natural environment.	.63
9 foster programs to track and reduce its emissions.	.60
13 have factory programs to conserve water and energy.	.62
16 redesign and re-engineer products and services to make them more environmentally friendly.	.71
22 invest in "cleaner" technology.	.89
26 establish effective recycling and reuse systems.	.80
29 increase the use of regenerative energy sources.	.86
Economic CSA (α = .35, IIC = .14, ρ_c = .43, AVE = .19)	
6 efficiently produce goods and services.	.35
8 pursue opportunities that provide the best rate of return.	.23
10(R) disregard profit-maximization. *(reverse scored)*	.26
25 be concerned with improving economic performance.	.72
Social CSA (α = .56, IIC = .25, ρ_c = .61, AVE = .35)	
4 take precautionary measures to ensure the safety of employees.	.51
17 implement strategies to manage the health of employees.	.99
21 implement internal policies that ensure equal opportunities in employees' promotion.	.32
24 support employees' lifelong learning by trainings and education.	.22

Note: Brazilian sample n = 94. Factor loadings are standardized. Factor loadings of the environmental sustainability subscale are significant (p < 0.001). All items of the economic sustainability subscale and two items (21 and 17) of the social sustainability subscale are not significant. α = Cronbach's Alpha, IIC = inter-item correlation, ρ_c = composite reliability, AVE = average variance extracted.

Table 6.16: CFA and Reliability Measures of the CSA Subscales (Chinese Sample)

Constructs and items	Factor loadings
Environmental CSA (α = .85, IIC = .44, ρ_c = .85, AVE = .45)	
3 implement programs to minimize the negative impact of organizational activities on the natural environment.	.63
9 foster programs to track and reduce its emissions.	.66
13 have factory programs to conserve water and energy.	.59
16 redesign and re-engineer products and services to make them more environmentally friendly.	.68
22 invest in "cleaner" technology.	.63
26 establish effective recycling and reuse systems.	.73
29 increase the use of regenerative energy sources.	.74
Economic CSA (α = .57, IIC = .26, ρ_c = .59, AVE = .29)	
6 efficiently produce goods and services.	.74
8 pursue opportunities that provide the best rate of return.	.32
10(R) disregard profit-maximization. *(reverse scored)*	.40
25 be concerned with improving economic performance.	.58
Social CSA (α = .82, IIC = .54, ρ_c = .82, AVE = .54)	
4 take precautionary measures to ensure the safety of employees.	.69
17 implement strategies to manage the health of employees.	.83
21 implement internal policies that ensure equal opportunities in employees' promotion.	.73
24 support employees' lifelong learning by trainings and education.	.68

Note: Chinese sample n = 174. Factor loadings are standardized and significant (p < 0.01). α = Cronbach's Alpha, IIC = inter-item correlation, ρ_c = composite reliability, AVE = average variance extracted.

Table 6.17: CFA and Reliability Measures of the CSA Subscales (German Sample)

Constructs and items	Factor loadings
Environmental CSA (α = .88, IIC = .50, ρ_c = .88, AVE = .51)	
3 implement programs to minimize the negative impact of organizational activities on the natural environment.	.60
9 foster programs to track and reduce its emissions.	.68
13 have factory programs to conserve water and energy.	.65
16 redesign and re-engineer products and services to make them more environmentally friendly.	.76
22 invest in "cleaner" technology.	.77
26 establish effective recycling and reuse systems.	.72
29 increase the use of regenerative energy sources.	.80
Economic CSA (α = .77, IIC = .46, ρ_c = .77, AVE = .46)	
6 efficiently produce goods and services.	.70
8 pursue opportunities that provide the best rate of return.	.63
10(R) disregard profit-maximization. *(reverse scored)*	.64
25 be concerned with improving economic performance.	.73
Social CSA (α = .70, IIC = .37, ρ_c = .71, AVE = .38)	
4 take precautionary measures to ensure the safety of employees.	.66
17 implement strategies to manage the health of employees.	.72
21 implement internal policies that ensure equal opportunities in employees' promotion.	.58
24 support employees' lifelong learning by trainings and education.	.48

Note: German sample n = 302. Factor loadings are standardized and significant ($p < 0.001$). α = Cronbach's Alpha, IIC = inter-item correlation, ρ_c = composite reliability, AVE = average variance extracted.

Table 6.18: CFA and Reliability Measures of the CSA Subscales (Indian Sample)

Constructs and items	Factor loadings
Environmental CSA (α = .79, IIC = .34, ρ_c = .78, AVE = .34)	
3 implement programs to minimize the negative impact of organizational activities on the natural environment.	.60
9 foster programs to track and reduce its emissions.	.61
13 have factory programs to conserve water and energy.	.51
16 redesign and re-engineer products and services to make them more environmentally friendly.	.75
22 invest in "cleaner" technology.	.59
26 establish effective recycling and reuse systems.	.49
29 increase the use of regenerative energy sources.	.50
Economic CSA (α = .60, IIC = .28, ρ_c = .63, AVE = .31)	
6 efficiently produce goods and services.	.71
8 pursue opportunities that provide the best rate of return.	.57
10(R) disregard profit-maximization. *(reverse scored)*	.34
25 be concerned with improving economic performance.	.55
Social CSA (α = .70, IIC = .34, ρ_c = .68, AVE = .36)	
4 take precautionary measures to ensure the safety of employees.	.63
17 implement strategies to manage the health of employees.	.50
21 implement internal policies that ensure equal opportunities in employees' promotion.	.73
24 support employees' lifelong learning by trainings and education.	.50

Note: Indian sample n = 84. Factor loadings are standardized and significant ($p < 0.05$). α = Cronbach's Alpha, IIC = inter-item correlation, ρ_c = composite reliability, AVE = average variance extracted.

Table 6.19: CFA and Reliability Measures of the CSA Subscales (Russian Sample)

Constructs and items	Factor loadings
Environmental CSA (α = .82, IIC = .40, ρ_c = .83, AVE = .42)	
3 implement programs to minimize the negative impact of organizational activities on the natural environment.	.55
9 foster programs to track and reduce its emissions.	.81
13 have factory programs to conserve water and energy.	.62
16 redesign and re-engineer products and services to make them more environmentally friendly.	.79
22 invest in "cleaner" technology.	.68
26 establish effective recycling and reuse systems.	.62
29 increase the use of regenerative energy sources.	.37
Economic CSA (α = .61, IIC = .31, ρ_c = .65, AVE = .33)	
6 efficiently produce goods and services.	.62
8 pursue opportunities that provide the best rate of return.	.68
10(R) disregard profit-maximization. *(reverse scored)*	.35
25 be concerned with improving economic performance.	.60
Social CSA (α = .61, IIC = .29, ρ_c = .62, AVE = .29)	
4 take precautionary measures to ensure the safety of employees.	.49
17 implement strategies to manage the health of employees.	.67
21 implement internal policies that ensure equal opportunities in employees' promotion.	.49
24 support employees' lifelong learning by trainings and education.	.50

Note: Russian sample n = 198. Factor loadings are standardized and significant ($p < 0.001$). α = Cronbach's Alpha, IIC = inter-item correlation, ρ_c = composite reliability, AVE = average variance extracted.

Table 6.20: CFA and Reliability Measures of the CSA Subscales (U.S. Sample)

Constructs and items	Factor loadings
Environmental CSA (α = .89, IIC = .53, ρ_c = .89, AVE = .54)	
3 implement programs to minimize the negative impact of organizational activities on the natural environment.	.68
9 foster programs to track and reduce its emissions.	.75
13 have factory programs to conserve water and energy.	.69
16 redesign and re-engineer products and services to make them more environmentally friendly.	.73
22 invest in "cleaner" technology.	.88
26 establish effective recycling and reuse systems.	.73
29 increase the use of regenerative energy sources.	.64
Economic CSA (α = .57, IIC = .25, ρ_c = .58, AVE = .26)	
6 efficiently produce goods and services.	.57
8 pursue opportunities that provide the best rate of return.	.57
10(R) disregard profit-maximization. *(reverse scored)*	.52
25 be concerned with improving economic performance.	.37
Social CSA (α = .71, IIC = .39, ρ_c = .72, AVE = .40)	
4 take precautionary measures to ensure the safety of employees.	.72
17 implement strategies to manage the health of employees.	.53
21 implement internal policies that ensure equal opportunities in employees' promotion.	.66
24 support employees' lifelong learning by trainings and education.	.59

Note: U.S. sample n = 177. Factor loadings are standardized and significant ($p < 0.01$). α = Cronbach's Alpha, IIC = inter-item correlation, ρ_c = composite reliability, AVE = average variance extracted.

Table 6.21: Descriptive Statistics and Pairwise Correlations (Brazilian Sample)

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Environmental CSA	5.70	1.09	(.88)	.14	.59	-.10	.26	-.17	.30	.20	.33	-.13	.22	.06	.05	.17	.08
2 Economic CSA	6.06	0.70	.07	(.35)	.24	-.01	.00	-.03	.37	.34	-.07	.22	.16	.18	-.05	-.07	-.03
3 Social CSA	6.04	0.71	.57	.20	(.56)	-.17	.14	-.08	.36	.29	.34	-.02	.33	.08	.08	.12	.04
4 Power distance	2.43	0.92	-.05	.01	-.12	(.53)	-.13	.38	.22	.06	-.24	.17	.02	.02	-.21	-.01	.05
5 Collectivism	4.59	1.14	.23	-.09	.17	-.14	(.76)	.02	.13	-.05	.32	-.21	.29	-.08	.20	-.14	-.25
6 Masculinity	3.05	1.27	-.15	-.04	-.06	.39	.01	(.66)	.24	.05	.01	.27	.16	.25	.00	-.47	-.07
7 Uncertainty avoidance	5.72	0.81	.28	.40	.38	.22	.07	.27	(.64)	.34	.23	.26	.28	.23	-.06	-.13	.08
8 Long-term orientation	6.02	0.68	.19	.32	.30	.06	-.07	.00	.33	(.71)	.10	.34	.32	.22	-.01	.03	.20
9 Self-transcendence	4.83	1.00	.34	-.10	.38	-.24	.32	.03	.25	.09	(.82)	.20	.61	.49	.22	.01	-.02
10 Self-enhancement	4.05	1.25	-.08	.28	.05	.19	-.26	.27	.31	.31	.15	(.78)	.40	.59	.09	-.18	.20
11 Conservation	4.15	1.10	.26	.14	.37	.03	.27	.14	.32	.28	.63	.38	(.82)	.41	.19	-.12	-.06
12 Openness to change	4.80	0.96	.13	.23	.13	.00	-.09	.21	.25	.19	.52	.51	.40	(.78)	.05	-.09	.21
13 Age	25.47	7.14	.10	-.06	.09	-.15	.33	.04	.05	-.05	.27	-.03	.27	-.02	-	-.09	.00
14 Gender	0.33	0.47	.17	-.03	.13	-.02	-.13	-.46	-.16	.05	.00	-.19	-.12	-.06	-.20	-	.20
15 CS course	.044	0.50	.09	-.02	.09	.07	-.22	-.08	.06	.21	.02	.19	-.06	.19	-.03	.20	-

Note: Brazilian sample n = 94. Gender (female = 1) and CS course (yes=1) are dummy variables. Pearson correlation coefficients are below the diagonal and Spearman correlation coefficients are above the diagonal. All correlation coefficients above |.20| are significant at p < .05 (two-tailed). Reliability measures (Cronbach's alpha) for each study variable are displayed in parentheses on the diagonal.

Table 6.22: Descriptive Statistics and Pairwise Correlations (Chinese Sample)

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Environmental CSA	5.56	0.90	(.85)	.34	.74	-.35	.06	.11	.26	.39	.25	-.10	.13	.08	-.07	.13	.06
2 Economic CSA	5.70	0.78	.45	(.57)	.44	-.23	.04	.10	.35	.35	.34	.18	.26	.26	.13	-.08	-.07
3 Social CSA	5.94	0.94	.78	.52	(.82)	-.42	.05	-.01	.32	.41	.26	-.04	.14	.04	-.01	.16	.09
4 Power distance	2.95	1.02	-.29	-.23	-.34	(.75)	.27	.35	-.07	-.19	-.11	.17	.05	.04	.01	-.22	-.07
5 Collectivism	4.28	0.89	.10	.05	.07	.34	(.72)	.24	.42	.34	.13	.20	.25	.00	.01	-.17	.00
6 Masculinity	4.09	1.15	.14	.10	.04	.38	.23	(.69)	.33	.13	.01	.15	.12	.02	-.06	-.39	-.06
7 Uncertainty avoidance	5.02	0.85	.30	.36	.37	-.01	.43	.33	(.77)	.41	.26	.22	.22	.15	.01	-.02	.01
8 Long-term orientation	5.33	0.69	.42	.36	.45	-.18	.31	.11	.40	(.55)	.32	.08	.29	.12	-.10	-.05	.03
9 Self-transcendence	4.97	0.87	.33	.39	.37	-.09	.14	.06	.27	.38	(.86)	.46	.71	.58	-.03	.04	-.03
10 Self-enhancement	4.21	1.07	-.07	.17	-.01	.20	.18	.12	.21	.16	.49	(.81)	.61	.51	-.05	-.09	.03
11 Conservation	4.38	0.80	.17	.26	.18	.10	.25	.13	.21	.31	.73	.61	(.78)	.47	-.05	-.01	-.04
12 Openness to change	4.47	0.87	.11	.30	.12	.08	.00	.05	.12	.15	.63	.53	.50	(.75)	.00	-.05	-.09
13 Age	20.99	0.98	-.02	.08	-.03	.00	-.03	-.04	.02	-.08	-.04	-.01	-.03	.02	-	-.06	.01
14 Gender	0.74	0.44	.14	-.05	.15	-.19	-.15	-.36	-.01	-.04	.04	-.07	.00	-.06	-.07	-	.08
15 CS course	0.26	0.44	.04	-.09	.07	-.07	-.02	-.07	.01	.06	-.03	.01	-.06	-.06	.00	.08	-

Note: Chinese sample n = 174. Gender (female = 1) and CS course (yes=1) are dummy variables. Pearson correlation coefficients are below the diagonal and Spearman correlation coefficients are above the diagonal. All correlation coefficients above |.14| are significant at $p < .05$ (two-tailed). Reliability measures (Cronbach's alpha) for each study variable are displayed in parentheses on the diagonal.

Table 6.23: Descriptive Statistics and Pairwise Correlations (German Sample)

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Environmental CSA	5.08	0.89	(.88)	-.01	.54	-.25	.17	-.25	.09	.06	.41	-.22	.09	.09	-.06	.16	.12
2 Economic CSA	5.93	0.83	.07	(.77)	.21	.00	.12	.02	.26	.22	-.12	.11	-.07	.11	-.09	-.14	-.09
3 Social CSA	5.65	0.81	.54	.40	(.70)	-.25	.22	-.16	.18	.18	.31	-.18	.15	.12	-.09	.13	.09
4 Power distance	3.00	0.99	-.28	-.07	-.27	(.72)	-.05	.44	.05	.07	-.26	.28	.07	-.07	.07	-.23	-.14
5 Collectivism	4.62	0.86	.17	.18	.26	-.06	(.79)	.08	.26	.11	.09	-.12	.09	-.08	.00	-.11	.06
6 Masculinity	3.48	1.38	-.29	-.04	-.18	.47	.06	(.72)	.13	.03	-.26	.14	.01	-.09	.09	-.47	-.05
7 Uncertainty avoidance	5.17	0.77	.10	.32	.27	.02	.29	.13	(.76)	.28	.04	.06	.15	-.04	-.15	-.07	-.03
8 Long-term orientation	5.29	0.73	.07	.27	.22	.08	.14	.06	.30	(.67)	.09	.28	.30	.03	-.16	.07	-.02
9 Self-transcendence	4.11	0.82	.41	-.13	.26	-.26	.10	-.29	.05	.06	(.77)	-.06	.53	.26	-.04	.25	-.01
10 Self-enhancement	3.62	1.02	-.23	.07	-.17	.28	-.13	.19	.05	.30	-.08	(.79)	.29	.28	.06	-.15	-.07
11 Conservation	3.42	0.76	.09	-.06	.13	.05	.09	-.01	.15	.29	.55	.28	(.71)	.09	-.06	.05	.00
12 Openness to change	4.52	0.82	.07	.07	.10	-.07	-.08	-.10	-.07	.02	.25	.25	.07	(.75)	-.04	.00	-.01
13 Age	22.64	1.87	-.07	-.10	-.08	.10	-.04	.08	-.16	-.17	-.02	.04	-.02	-.08	-	-.20	.10
14 Gender	0.48	0.50	.16	-.17	.09	-.23	-.10	-.47	-.08	.05	.25	-.15	.06	.01	-.17	-	-.08
15 CS course	0.19	0.40	.12	-.05	.10	-.13	.06	-.06	-.01	-.01	-.02	-.06	-.01	-.01	.09	-.08	-

Note: German sample n = 302. Gender (female = 1) and CS course (yes=1) are dummy variables. Pearson correlation coefficients are below the diagonal and Spearman correlation coefficients are above the diagonal. All correlation coefficients above |.11| are significant at $p < .05$ (two-tailed). Reliability measures (Cronbach's alpha) for each study variable are displayed in parentheses on the diagonal.

Table 6.24: Descriptive Statistics and Pairwise Correlations (Indian Sample)

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Environmental CSA	5.39	0.87	(.79)	.59	.69	-.16	.28	-.04	.19	.36	.32	.26	.21	.40	.00	.05	.05
2 Economic CSA	5.41	0.87	.61	(.60)	.52	-.17	.20	-.01	.16	.25	.19	.32	.19	.29	.04	-.09	.13
3 Social CSA	5.49	0.96	.72	.53	(.70)	.01	.23	.03	.15	.36	.16	.15	.15	.17	-.04	.08	.20
4 Power distance	3.37	1.38	-.17	-.16	-.01	(.84)	.17	.67	.08	-.05	-.25	-.09	.05	-.21	.11	-.15	-.13
5 Collectivism	4.80	0.97	.29	.22	.23	.20	(.75)	.32	.59	.31	.22	.26	.31	.29	.14	-.13	.11
6 Masculinity	3.77	1.34	-.05	-.01	.02	.69	.30	(.68)	.20	.07	-.27	-.05	-.06	-.18	.20	-.29	-.27
7 Uncertainty avoidance	4.75	0.99	.27	.22	.24	.06	.59	.18	(.72)	.47	.39	.28	.39	.32	.19	-.03	.15
8 Long-term orientation	5.25	0.87	.46	.31	.39	-.03	.27	.11	.47	(.66)	.42	.47	.45	.41	.15	.06	.03
9 Self-transcendence	4.80	1.18	.38	.22	.26	-.23	.22	-.22	.38	.47	(.88)	.76	.79	.87	.18	.01	.18
10 Self-enhancement	4.80	1.22	.27	.31	.17	-.01	.20	.01	.25	.44	.75	(.84)	.82	.76	.16	.02	.17
11 Conservation	4.78	1.05	.28	.22	.17	.06	.29	-.03	.35	.47	.83	.82	(.87)	.78	.12	-.04	.22
12 Openness to change	4.89	1.21	.43	.30	.24	-.17	.26	-.14	.32	.43	.86	.76	.81	(.89)	.16	.00	.06
13 Age	22.39	1.72	-.14	-.13	-.12	.13	.06	.18	.05	.06	.12	.12	.08	.11	-	-.24	.05
14 Gender	0.50	0.50	.06	-.09	.11	-.14	-.16	-.28	-.02	.06	.04	.02	-.02	.03	-.24	-	.00
15 CS course	0.24	0.43	.07	.15	.21	-.14	.07	-.29	.15	.06	.15	.18	.19	.05	-.01	.00	-

Note: Indian sample $n = 84$. Gender (female = 1) and CS course (yes=1) are dummy variables. Pearson correlation coefficients are below the diagonal and Spearman correlation coefficients are above the diagonal. All correlation coefficients above |.21| are significant at $p < .05$ (two-tailed). Reliability measures (Cronbach's alpha) for each study variable are displayed in parentheses on the diagonal.

Table 6.25: Descriptive Statistics and Pairwise Correlations (Russian Sample)

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Environmental CSA	5.30	0.90	(.82)	.23	.65	-.16	.12	-.15	.14	.25	.30	-.15	.17	-.04	.06	.12	.01
2 Economic CSA	6.20	0.72	.22	(.61)	.32	-.14	-.05	.08	.02	.31	.01	.08	-.07	.14	.05	.04	.09
3 Social CSA	5.96	0.72	.66	.36	(.61)	-.25	.06	.02	.19	.31	.18	-.07	.07	.01	.03	.00	.05
4 Power distance	2.73	1.11	-.17	-.16	-.26	(.72)	.25	.15	.06	.02	.02	.24	.09	.12	.16	-.08	.01
5 Collectivism	3.64	1.04	.11	-.06	.07	.20	(.76)	.19	.36	.10	.20	-.07	.21	-.09	.09	-.11	.03
6 Masculinity	3.80	1.49	-.14	.12	.03	.17	.17	(.71)	.16	.04	.05	.07	.12	.05	-.01	-.43	-.07
7 Uncertainty avoidance	4.36	0.93	.15	.04	.21	.05	.39	.20	(.72)	.23	.12	-.02	.23	-.08	.02	-.04	-.04
8 Long-term orientation	5.48	0.88	.23	.25	.30	.03	.09	.07	.25	(.72)	.14	.21	.13	.14	.03	.01	.10
9 Self-transcendence	3.95	0.87	.31	.04	.20	.01	.16	.03	.14	.11	(.76)	.01	.61	.21	.05	.10	-.06
10 Self-enhancement	3.95	1.16	-.16	.01	-.10	.27	-.13	.07	-.04	.21	-.01	(.76)	.16	.54	.04	-.11	.10
11 Conservation	3.54	0.90	.18	-.10	.05	.15	.19	.11	.24	.17	.61	.17	(.74)	.17	.10	.04	.05
12 Openness to change	4.40	0.96	-.05	.09	-.02	.12	-.18	.07	-.11	.12	.20	.53	.17	(.78)	.08	-.08	.13
13 Age	18.25	0.79	.03	.01	.04	.18	.07	-.01	.01	.04	.10	.04	.15	.09	-	.00	.10
14 Gender	0.75	0.44	.11	-.01	-.01	-.09	-.09	-.44	-.05	.02	.13	-.10	.06	-.06	-.01	-	.06
15 CS course	0.20	0.40	.02	.00	.02	-.01	.00	-.06	-.05	.10	-.04	.10	.05	.11	.13	.06	-

Note: Russian sample n = 198. Gender (female = 1) and CS course (yes=1) are dummy variables. Pearson correlation coefficients are below the diagonal and Spearman correlation coefficients are above the diagonal. All correlation coefficients above |.14| are significant at $p < .05$ (two-tailed). Reliability measures (Cronbach's alpha) for each study variable are displayed in parentheses on the diagonal.

Table 6.26: Descriptive Statistics and Pairwise Correlations (U.S. Sample)

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Environmental CSA	5.47	0.84	(.89)	.34	.60	-.26	.12	-.20	.21	.16	.42	-.10	.00	.14	.00	.05	.04
2 Economic CSA	5.94	0.69	.35	(.57)	.36	-.12	.00	.04	.33	.45	.22	.15	.18	.18	.02	-.02	.16
3 Social CSA	5.88	0.76	.62	.41	(.71)	-.24	.14	-.18	.29	.23	.31	-.08	.10	.11	.07	.09	.10
4 Power distance	2.45	0.82	-.26	-.07	-.23	(.62)	.33	.39	-.07	-.07	-.12	.30	.20	-.02	-.03	-.29	-.06
5 Collectivism	4.09	0.84	.10	-.03	.09	.31	(.71)	.12	.18	-.02	.21	.09	.25	.02	-.01	-.11	-.05
6 Masculinity	2.83	1.21	-.22	.05	-.17	.43	.13	(.67)	-.03	-.01	-.11	.21	.21	.08	-.12	-.56	-.01
7 Uncertainty avoidance	5.37	0.76	.21	.29	.26	-.10	.16	-.05	(.74)	.32	.07	.10	.16	.02	.01	.08	.08
8 Long-term orientation	5.77	0.60	.17	.41	.23	-.14	-.06	-.01	.31	(.59)	.07	.14	.12	.12	.04	-.05	.03
9 Self-transcendence	4.50	0.81	.42	.17	.32	-.14	.18	-.14	.09	.08	(.78)	.26	.50	.50	-.01	.02	.01
10 Self-enhancement	4.03	1.04	-.07	.14	-.07	.28	.08	.21	.12	.12	.21	(.77)	.51	.47	-.05	-.18	.00
11 Conservation	3.94	0.84	.04	.14	.12	.17	.23	.23	.16	.13	.49	.49	(.74)	.33	-.02	-.09	-.05
12 Openness to change	4.72	0.82	.19	.16	.12	.01	.03	.07	.02	.11	.53	.44	.33	(.75)	.08	-.09	-.08
13 Age	23.06	4.59	-.04	.04	.01	-.02	.00	-.15	.03	.03	-.10	-.10	.00	-.10	-	-.02	.06
14 Gender	0.53	0.50	.06	.02	.08	-.30	-.09	-.56	.10	-.06	.07	-.16	-.13	-.06	.02	-	.05
15 CS course	0.62	0.49	.05	.20	.12	-.07	-.03	.00	.08	.04	.00	.00	-.05	-.06	.01	.05	-

Note: U.S. sample n = 177. Gender (female = 1) and CS course (yes=1) are dummy variables. Pearson correlation coefficients are below the diagonal and Spearman correlation coefficients are above the diagonal. All correlation coefficients above |.14| are significant at $p < .05$ (two-tailed). Reliability measures (Cronbach's alpha) for each study variable are displayed in parentheses on the diagonal.

7 Discussion and Conclusion

The present dissertation introduced a new measurement scale - the CSA scale - to assess attitudes toward the importance of environmental, economic and social sustainable business practices for companies' long-term success. Following pre-tests and a pilot study test and retest, the self-developed CSA scale was employed in a questionnaire survey with 1029 university students from the BRIC countries, Germany, and the USA. This multi-country study aimed at investigating the relevance business students from these countries ascribe to the three spheres of corporate sustainability and the role of individual level factors on these attitudes. The last chapter begins with a summary of the core objectives of the dissertation and a discussion of the findings. Then, the theoretical and practical implications are highlighted. Finally, in order to put the findings into perspective, important limitations of the present dissertation are outlined along with suggestions for future research.

7.1 Summary and Discussion of Findings

The dissertation addressed several important conceptual and empirical gaps in corporate sustainability research. First, it adds to the literature by operationalizing the construct of corporate sustainability attitudes by means of a self-developed measurement scale. Previous empirical studies on the individual perspectives on corporate responsibility and sustainability have been characterized by disparate measurement scales. Furthermore, to the best of the author's knowledge, none of these studies has operationalized the concept of corporate sustainability attitudes as defined in this dissertation. Based on a review of theoretical and empirical literature, we developed a new multi-item scale. The CSA scale measures how relevant respondents perceive environmental, economic and social sustainable business practices for the long-term success of companies. The self-developed scale differs from existing scales, e.g. the PRESOR scale and CSRO scale, in two ways. First, the scale operationalizes the triple bottom line conceptualization of corporate sustainability. This implies a three-dimensional scale that captures the economic, environmental and social sphere of CS. Second, the scale did not only assess general CS attitudes or orientations, but investigated attitudes toward the importance of economic, environmental and social sustainable business practices for companies' long-term success. The study findings are, thus, much more informative with respect to the perceived strategic relevance of integrating environmental, social, and economic aspects into corporate decision-making. The developed scale underwent three pre-tests, a pilot study test-retest and a first large scale study in Germany before it was applied in a multi-country study. The pre-tests, pilot study and large scale study in Germany lent preliminary support to the three-dimensionality of the newly developed scale and its psychometric soundness.

The second objective of the dissertation was to establish cross-national applicability of the self-developed CSA scale. Meaningful comparison of construct means and regression results

across the six country samples requires a scale that measures the same construct in each country. By means of MGCFA, the assumptions of measurement equivalence, including configural, metric, and scalar invariance, were simultaneously tested across the six country samples. The environmental CSA subscale demonstrated full configural, metric and scalar measurement invariance across the six countries. The economic CSA subscale exhibited full configural and metric invariance, and partial scalar invariance across the six countries. The social CSA subscale showed full configural invariance and partial metric and scalar invariance. The results of the MGCFA, therefore, provide preliminary support on the cross-cultural applicability of the CSA subscales.

Third, the dissertation complements previous empirical research on individual perspectives of corporate sustainability and responsibility by assessing CS attitudes of business students in a multi-country empirical study in the BRIC countries, Germany, and the USA. Thereby, it provides new insights to international similarities and differences of business students' attitudes toward CS in these countries. The literature review of empirical studies in Chapter 3 revealed that, in contrast to the USA, research on emerging markets has so far been rather scarce. The findings of the present multi-country study indicate that respondents in all six country samples evaluated economic, environmental, and social sustainable business practices as being moderately to strongly important, on average, for companies success in the long run, with subscale means ranging from 5.08 to 6.20 on a seven-point scale. In spite of the similarities regarding the overall importance of the three spheres of corporate sustainability, the country samples exhibit differences in the order of importance. Environmental CS was considered the least important aspect among all country samples, with the exception of India. In fact, the Indian sample was the only country sample that put equal importance to all three spheres of corporate sustainability. The respondents in the German and Russian sample rated economic CS as significantly more important than social and environmental CS respectively. In the Brazilian and U.S. sample, respondents showed no significant difference between the degree of importance allocated to economic and social CS. The Chinese sample evaluated social CS highest, followed by economic and environmental CS. With due regard to the limited generalizability of the study results, the findings on the CS attitudes of the Chinese and Indian respondents are to some extent contrary to the prevalent public perception. In the past, several companies in China and India have been subject to criticism by the Western media because of environmental offences and the ignorance of social standards, including child labor and exploitation of workers. This behavior is rather indicative of an insufficient consideration of environmental and social sustainable business practices. With a combined total of more than two billion inhabitants, China and India play an important role in achieving sustainable development. It remains to be seen if Chinese and Indian companies will build capacities to face the environmental and social challenges of the future. However, the findings of this study reveal a possible mindset shift in the future workforce of China and India, which recognizes the importance of all three dimensions of sustainable business practices.

Finally, the present dissertation has taken a step toward identifying the role and impact of individual cultural orientations, personal value priorities, and selected socio-demographic factors on business students' attitudes associated with corporate sustainability. The results of the six-country study partially support the hypothesized relationships proposed in Chapter 3. In general, both individual cultural orientations and personal values account for some of the variance of the respondents' CS attitudes, whereas the control variables age, gender, and CS course attendance were found to play a minor role. The findings, which indicate that individual characteristics, other than age and gender, are more predictive of attitudes toward CS, are in line with previous studies (see e.g. Ng & Burke, 2010; Simmons et al., 2009). The sampled student groups were very homogenous regarding their age. Thus, it is not surprising that the demographic variable age was not found to make a difference in shaping CS attitudes. The results might be different if conducted with respondents from different generations (see e.g. Furrer et al., 2010). Gender, with three exceptions, did not significantly affect CS attitudes. Concerning the exceptions, female respondents in the Chinese sample exhibited more favorable attitudes toward environmental CS. Moreover, female respondents in the German and pooled sample showed a less favorable attitude toward economic CS compared to their male counterparts. Controlling for CS course attendance revealed that course attendance was positively associated with environmental CSA and negative associated with economic CSA in the German sample, whereas the U.S. respondents, who indicated that they had participated in CS courses, exhibited a more favorable attitude toward economic CS. One possible explanation for the results in the German sample might be that the attended CS courses solely focused on social and environmental issues. Hence, it is possible that students who have attended such courses are biased toward a more social and environmental perspective, while neglecting the importance of corporate economic performance. An explanation for the positive relationship in the USA could be a better integration of all three dimensions into CS courses. However, as will be shown in the limitation section, one has to be careful with interpretations of the causal relationship between CS course attendance and CS attitudes.

Regarding the five Hofstede dimensions of individual cultural orientations, long-term orientation, in particular, was found to be a strong predictor of all three CSA dimensions. Moreover, the empirical findings show that higher uncertainty avoidance had a significant positive effect on economic and social CSA in the majority of the country samples. Partial support was found for the hypothesized negative influence of higher power distance on favorable social CSA. Contrary to previous research (Kim & Kim, 2010; Ng & Burke, 2010; Waldman et al., 2006), we found very little support for a positive influence of collectivism on CSA. A positive link between higher collectivism and social CSA was solely found for the German sample. Finally, the findings on the impact of masculinity are ambiguous. This, at least to some extent, underlines Kirkman et al.'s (2006) assumption that cultural values might yield different effects on outcome variables in different countries. With the exception of masculinity, the

significant effects of individual cultural orientations, however, went into the same direction in each of the six countries.

Concerning the four dimensions of Schwartz's personal values, the results provide strong support for the hypothesized positive relationship of self-transcendence and environmental and social CSA. The present findings confirm previous empirical research on the link between self-transcendence values and attitudes toward environmental and social CS (Simmons et al., 2007; Shafer et al., 2007; Fukukawa et al., 2007; Collins et al., 2007). Only limited support was found for a negative impact of self-enhancement values on environmental and social CSA. Moreover, conservation values played only a minor role. With a few significant negative effects on environmental and social CSA, the hypothesized negative impact of conservation values on environmental and social CSA is partially supported. Finally, the same accounts for the higher order value dimension of openness to change. A few significant positive effects were found for environmental, economic, and social CSA. Moreover, the analyses revealed that personal values are not a very good predictor for economic CSA, with the exception of openness to change. Nevertheless, the findings support the impact of personal values on attitudinal processes involving sustainability issues.

7.2 Theoretical and Practical Implications

The newly developed CSA scale and the findings from the multi-country study have several implications for theory and practice. The self-developed CSA scale can be employed in different settings. For example, future studies may use the CSA scale to examine the link of predictor and outcome variables on CS attitudes. The scale can also be used to assess the effectiveness of courses and trainings on sustainability topics. Business schools and companies that offer such courses for their students and employees can ask participants to fill out the CSA scale before and after the course to examine whether the course influences CS attitudes. Moreover, the CSA scale could be applied by companies in recruiting and development. If decision makers want to transform their company into a sustainable business, they need to align their recruiting process likewise. That implies that potential employees, and especially high-potentials that constitute future managers, are screened with respect to their attitudes toward the relevance of economic, environmental and social sustainability. Understanding the mindsets of future managers will help the company identify and select individuals who exhibit characteristics supportive of sustainable business practices. This will, certainly, increase the chances of successfully integrating sustainable business practices with corporate strategies.

The empirical findings of the multi-country study revealed that individual cultural orientations and personal values, in fact, have an impact on CS attitudes. Consequently, when assuming a societal adoption of the normative goal of corporate sustainability, governments, universities and schools should identify and promote values that induce positive sustainability atti-

tudes and behavior. As pointed out in Chapter 3.2.2, values are shaped and developed throughout childhood and adolescence. This could be a possible explanation why CS courses and trainings that take place at business schools and companies often struggle to foster more favorable attitudes and beliefs toward sustainability issues. Thus, it is important to convey sustainability promoting values and attitudes as early in life as possible.

Schools and universities may be able to reinforce a shift in values and attitudes and foster a better understanding of the concept of corporate sustainability by providing better sustainability education. Thereby, the focus should be less on philanthropic, but on sustainability issues including the challenges companies have to face if they ignore sustainability aspects in the future. If the three spheres of corporate sustainability are not considered as intertwined and equally important aspects, environmental and social corporate sustainability will remain an add-on in corporate practice. Moreover, a close link between corporate sustainability and its contribution to overall sustainable development needs to be emphasized in education. The pivotal role of schools and universities was also taken up by Matten and Moon's (2008) argument of normative pressure through educational and professional authorities (p. 412). In addition, Jones (1996) contended that an individual forms attitudes based on the knowledge and information obtained. Thereafter, people act consistent with their attitudes and adopt corresponding behavior motives. Thus, in order to change an individual's behavior, information needs to be provided which will then lead to acquiring knowledge and, eventually, to a change in attitudes (p. 57).

7.3 Limitations and Directions for Future Research

As with all empirical studies, there are several limitations to this dissertation, which call for future research. The self-developed scale certainly requires further testing and validation in future studies. The pre-tests, pilot study and large scale studies have provided some credibility, also cross-nationally, of the three CSA subscales. However, the economic and social CSA subscales certainly need further refinement to establish even better psychometric properties. The study supported the findings of Wong et al. (2003, p. 43) on the difficulties arising in cross-cultural studies when incorporating negatively worded items into a scale. Therefore, future studies might consider dropping the negatively formulated items.

Additionally, the multi-country study conducted has limitations. Cross-sectional, self-reported data is generally considered less reliable than data gathered at different points in time through multiple methods (e.g. observations, interviews, experiments). Due to the data collection at one point in time, the findings do not allow drawing conclusions on the stability of personal values and attitudes. Thus, longitudinal studies should be conducted in the future to deepen the understanding and confirm the relationship between cultural values, individual values and CS attitudes. Especially in the BRIC countries, which are characterized by recent economic,

political and social changes, attitudes might change rapidly. Future studies should also extend research to the other four GLOBE clusters, which were not considered within the present six-country study.

Moreover, students were asked to indicate whether they had attended any CS courses or trainings. However, we did not ask whether the attended CS courses were elective or compulsory courses. Thus, we do not know if the positive attitudes toward environmental and social CSA made students attend elective CS courses or if the courses indeed fostered a more favorable CSA attitude. As such, we could not directly examine the extent to which exposure to sustainability topics through courses had influenced students' attitudes towards corporate responsibilities. In order to draw reliable and meaningful conclusions on the causality between CS course attendance and attitudes on CS, future research should apply a pre- and post course design to gather further insights on the effectiveness of CS courses on changing CS attitudes. Providing further insights on the effectiveness of CS courses is especially interesting in light of a growing number of university courses being offered that highlight the link between business and society. In addition, researchers should collect information on the number and type of business and economics courses that the students had attended to set the findings into perspective. The higher proportion of management courses that deal exclusively with economic aspects might outweigh the effects of a single course on corporate responsibility and sustainability.

Furthermore, the present study gathered data from business students, who are trained and educated in thinking in economic terms. Hence, it is not advisable to extrapolate the findings of business students' attitudes to non-business student or non-student groups. It would be interesting to replicate this study with non-business students and compare the findings with our study results to examine the impact of business and economics education on CS attitudes. As mentioned in the beginning of this dissertation, student samples have several advantages and therefore are useful in exploring the hypothesized relationships. However, due to the nature of the examined sample, the impact of organizational, industry and legal factors were not accounted for in this study. Therefore, caution should be exercised in generalizing the findings to managers' attitudes or drawing implications for the students' later workplace behavior. Future studies should extend the research on CS attitudes to non-student samples, including entrepreneurs, managers, and employees. Studying and comparing these groups to student groups will certainly enhance the understanding on attitudes and perceptions of corporate sustainability.

Finally, the study was concerned with attitudes toward CS. We did not investigate behavioral intentions or the students' actual sustainable behavior. Despite a well-established theoretical and empirical link between attitudes and behavior (Ajzen, 1991; Eagly & Chaiken, 1993, 2007; Fishbein & Ajzen, 1975), further longitudinal multi-country research of student and

professional samples is needed regarding the link between attitudes toward corporate sustainability and actual behavior. Moreover, much work remains to be done to explore the underlying dynamic of predictors and outcomes of corporate sustainability attitudes. Research on potential factors that shape and foster favorable sustainability attitudes and beliefs, as well research that aims at linking CS attitudes to firms' outcomes, are urgently needed.

List of References

Note: References marked with an asterisk indicate studies included in the literature review in Chapter 3.

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