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Toward a standardized supplier code of ethics: development of a design concept based on diffusion of innovation theory

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Abstract Supplier codes of ethics have become important instruments for ethical supplier management. They capacitate firms to govern numerous supplier relationships simultaneously toward ethical business conduct. Since many actors nowadays pursue the goal of ethical supplier management, a cascade of codes has emerged. However, this plurality poses multiple problems on its own account, such as lacking effectiveness of some of these codes, restrictions on the development of universally accepted ethical standards, and greenwashing. It also creates operational difficulties and unnecessary procedural costs for firms and is thus inefficient. The aggregated amount of issues suggests the development of a standardized supplier code of ethics as a remedy. Based on diffusion of innovation theory as theoretical lens and as conceptual support, we employ a multi-method research design to develop a design concept for such a standard. We begin with a content analysis of relevant scientific literature on content, adoption, and effectiveness of codes of ethics, in which we also study numerous extant codes and initiatives. It leads to six propositions on key success factors of a standardized supplier code of ethics. We then amend a design science approach to develop a design concept for such a standard that complies with these requirements, with the support of corporate experts from Germany, China, and India. Our results are informative about the content of a standardized supplier code of ethics, and we propose multiple effectiveness- and diffusion-facilitating mechanisms as additional components in the overall design concept. With stakeholders' further support, the envisioned standard is expected to foster businesses' corporate social performances around the globe.

Keywords Code of ethics · Corporate social responsibility · Diffusion of innovation theory · Multi-method research · Content analysis · Design science

Abbreviations
CEO	Chief executive officer
CMM	Capability maturity model
CPO	Chief procurement officer
CSP	Corporate social performance
CSR	Corporate social responsibility
DOI	Diffusion of innovation theory
NGO	Non-governmental organization
SCGC	Supply chain governance code
SCoE	Supplier code of ethics

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1 Introduction

International or global regimes and regulations that are capable of resolving major environmental and social problems do not yet exist [26, 108]. Hence, stakeholders have begun to expect firms to fill the resulting gaps [63]. In consequence, the concept of corporate social responsibility (CSR) has gained much attention worldwide and evolved into a pivotal source of legitimacy for business activities [14]. CSR has been defined 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" [35, p. 6]. As such, it deals with all ethical responsibilities of firms toward society that transcend legal obligations [84], for example social, environmental, and human rights issues, as well as problems such as corruption, bribery, or product safety.

To comply with these ethical responsibilities, almost all major globally operating firms nowadays use codes of ethics [60, 71]. A code of ethics is defined as a document consisting of a set of principles dedicated to guide behavior of particular actors on certain issues [cp. 62, 69, 107]. Firms use these codes to guide their employees' behavior toward each other and toward external stakeholders. With respect to the latter purpose, codes of ethics can thus be understood as contracts between an organization and society [94] aiming at the above-stated ethical responsibilities. By using codes of ethics, firms strive to manage and improve their corporate social performance (CSP), understood as "a business organization's configuration of principles of social responsibility, processes of social responsiveness and policies, programs, and observable outcomes as they relate to the firm's societal relationships" [131, p. 693].

Increasingly, however, stakeholders also expect firms to accept responsibility for wrongdoings at suppliers' sites [5], since firms have the potential to directly influence the CSP of their suppliers, for example through supplier selection and product design decisions [65, 85]. Deficits in suppliers' CSP have the potential to cause negative publicity, reputational damage, or even litigation for buying firms and must therefore be characterized as risks [15, 50]. With modern communication technology, knowledge about suppliers' unethical behavior also spreads more easily than it used to [40] so that the management of suppliers with respect to ethical issues becomes ever more important. However, globalization and division of labor pose major challenges for buying firms in this respect. The efficient transfer of goods, money, and information through supply chains often requires many interorganizational relationships [70]. Due to high levels of external value added in many industries [16], many firms tend to have very large numbers of direct and indirect suppliers. For example, one of the firms that participated in this research has approximately 80,000 direct suppliers. The resulting complexity makes the fulfillment of all stakeholder requests extraordinarily difficult and virtually impossible at the individual supplier relationship level. Moreover, CSR standards diverge to a great extent among regions and countries [32]. With global sourcing and global supply chains being firmly established in corporate practice [88], buying firms may therefore have to manage major ethical problems which they are not familiar with from their domestic country. Overall, structural supply chain complexity, which subsumes the previously discussed horizontal, vertical, and spatial complexity dimensions [20], simultaneously causes a need for ethical supplier management and a difficulty to actually succeed in it. Because it is impossible to manage all supplier relationships individually, firms are increasingly prescribing codes of ethics to all of their suppliers. These SCoE are instruments to effectively govern multiple or even vast numbers of dyadic supplier relationships simultaneously in order to prevent perpetrations [21].

Since numerous firms and institutional actors, such as non-governmental organizations (NGOs), pursue the goal of ethical supplier management in parallel, a cascade of different SCoE with different purposes and initiators has emerged to date [97]. Given that not all firms have particular expertise on CSR in general or on the most pressing ethical problems of the countries from which they source in particular, it is evident that the effectiveness of extant SCoE varies, with some being less advanced than others. Absence of unanimously accepted SCoE contents hinders the development of universally accepted CSR standards. Further, intransparency related to SCoE effectiveness and misfits between multiple SCoE open up opportunities for greenwashing and free riding. Furthermore, the plurality of codes that suppliers might have to apply in parallel poses major handling difficulties and consequential procedural costs [59, 94, 113]. The aggregated amount of problems stemming from the plurality of SCoE suggests the development of a standardized SCoE as a remedy. We henceforth refer to this envisioned standard as Supply Chain Governance Code (SCGC).[1]

According to Gilbert and Rasche [37], a standardized CSR initiative, such as a SCGC, potentially offers many advantages to society, firms, and shareholders. We conjecture that the SCGC could influence firms' behavior toward more ethical behavior through multiple mediating mechanisms: If a SCGC is observable (in a sense that its processes and results are objectively traceable and transparent), if it is thoroughly audited and effectively enforced, it is expected to eliminate greenwashing. In addition, if firms can refer to the SCGC as a brand-like label that distinguishes them from their competitors with regard to their CSP, CSR-related competition might emerge which would raise the overall CSP level among firms. Further, if it actually became a widespread standard, a SCGC could increase awareness for CSR and other CSR-related initiatives. Next, since shareholders increasingly show interest in investing their money with regard to CSR criteria [53], a global label such as the SCGC could complement extant ratings in increasing observability to shareholders and thus ease financing for SCGC adopters.

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[1] We use this label to refer to a standardzed supplier code of ethics which is yet to be created.

Given the amount of problems stemming from the plurality of extant SCoE, as well as the potential benefits of a SCGC, the aspired contribution of this paper is to present a first design concept of a SCGC. We specifically regard the following three research questions as essential: (1) Which contents can reasonably be covered by a SCGC? (2) Which mechanisms could ease the adoption of a SCGC by firms and its roll-out into business practice? (3) How can a supraorganizational SCoE become an effective standard, and which barriers have to be overcome to achieve this?

We chose diffusion of innovation theory (DOI) as the theoretical lens through which we regard our research problem as we conceive the development of a SCGC as a supply chain innovation [6]. Arlbjørn et al. [6, p. 8] define a supply chain innovation as "a change (incremental or radical) within the supply chain network, supply chain technology, or supply chain processes (or combinations of these) that can take place in a company function, within a company, in an industry, or in a supply chain in order to enhance new value creation for the stakeholder." DOI is highly informative to the development of our innovative SCGC design and therefore offers a suitable conceptual background to our research. DOI is presented in the following section, in which we consider antecedents of innovation adoption by firms and also regard the temporal diffusion process of an innovation, to inform our research design.

Since the SCGC does not yet exist, but is envisioned here as a new artificial tool for corporate practice, we cannot derive an answer to our research questions solely from empirical investigations of current business practice. We require a research methodology that is actually capable of creating a novel concept. However, to develop a new concept in a rigorous manner, we also have to rely on extant theory and literature. That is why we chose a multi-method research design, including a content analysis of extant scientific literature, as well as a design science approach. This multi-method research design is explained in depth in the section that follows the presentation of DOI, together with the content analysis and the design science methodology.

A subsequent literature review serves as the point of departure to tackle the overall problems related to content, adoption, and effectiveness of the SCGC, as expressed in our research questions, and to anchor our research in the relevant discourse. The first part deals with the content side of the SCGC. Therein, we depict the results of our content analyses of previous scientific research and of existing supraorganizational codes. The review of supraorganizational codes serves to anticipate and back up potential content inventory for a SCGC. The second part on adoption reflects factors which foster the adoption of the SCGC in firms and its overall diffusion. The last part refers to factors that foster the effectiveness of codes of ethics. In a fourth part, we review the results of the literature review from the perspective of DOI. This leads to six propositions of requirements that an effective SCGC has to fulfill. Beyond the immediate purpose of our research, our analysis also demonstrates the usefulness of applying DOI to research on codes of ethics.

The following section depicts empirical insights on the key success factors of the SCGC design. These insights are derived from interviewing corporate experts and from conducting workshops with them, with the aim of modifying or validating the findings gained from the scientific literature. The section ensures that the derived SCGC concept is not only theoretically informed, but also practically feasible.

The penultimate section of the paper depicts our proposed SCGC design concept. It complies with all previously identified requirements. The concluding section includes a brief summary, reflects on limitations, and depicts avenues for future development of the SCGC.

2 Diffusion of innovation theory

Diffusion of innovation theory was established and coined by Everett M. Rogers in 1962 and has been continuously refined until today. An innovation, according to Rogers [100, p. 12], is "an idea, practice, or object that is perceived as new by an individual or other unit of adoption." Accordingly, adoption is the process whereby individuals or firms evolve from getting to know an innovation through being interested in it, deciding to use it and finally implementing it in full in their firm [100]. Diffusion refers to "the process in which an innovation is communicated through certain channels over time among the members of a social system" [100, p. 5] While adoption relates to the process which an individual adopter passes through and thus uses the adopter as the unit of analysis, diffusion thus considers the innovation as the unit of analysis and refers to the process of its spread through the population of all potential adopters.

Diffusion of innovation theory serves both as a theoretical lens through which we view our research problem and as a design aid for the development and institutionalization of a standardized SCoE. It is worth highlighting that, although DOI relates most directly to our second research question on SCGC adoption, it will later on also be possible to found our content- and effectiveness-related research questions on DOI.

2.1 Antecedents of adoption

One main stream of research in DOI is concerned with the question, why some innovations diffuse faster than others

and what reasons cause deviation in the rate of adoption, defined as "the relative speed with which an innovation is adopted by potential units within a social system" [101, p. 28]. Rogers [100] identified five innovation-related qualities that determine the rate of adoption: relative advantage, compatibility, trialability, observability, and complexity. These qualities are innovation-focused, meaning that the diffusion process is not scrutinized with regard to potential adopters' characteristics (which are reflected by firms' innovativeness). Rather, the characteristics refer to perceptions of the innovation itself [86]. Thus, depending on the degree to which potential adopters perceive the innovation to exhibit the above qualities (or not, with regard to the factor complexity), the rate of adoption is likely to increase. Rogers [100] found that between 49 and 87 % of the variance in different rates of adoption can be explained by these five factors, with relative advantage as the strongest predictor. Other studies identified complexity and compatibility as the second and third most important factors [e.g., 8, 22, 24].

Hence, together these five factors provide insights into designing innovations in order to accelerate their diffusion. As Rogers [100, p. 105] states, "the diffusion approach promises a means (…) [to those who] seek to get the scientific findings utilized and/or (…) desire to use the research results (…) to solve a particular social problem or to fulfill a need." Therefore, by shaping an innovation that is supposed to diffuse according to these five aspects, its spread can be facilitated and accelerated. We shall discuss each factor in turn.

Relative advantage means first of all that an innovation benefits from higher acceptance if its potential adopters perceive it to be superior to its alternatives and especially to the status quo which it is supposed to displace. However, this relative advantage does not necessarily have to be of economical nature. Although innovations are usually more efficient than their predecessors, with regard to technologies and new processes, and although advantages are often related to higher productivity, there might be other non-economic benefits an innovation brings about, such as convenience or satisfaction. Referred to our purposes, this means that the SCGC design concept must be perceived as an innovation that is relatively advantageous to (a) absence of a SCoE and (b) a self-developed SCoE. In the proposed concept, the SCGC will achieve this factor by providing visible advantages for its adopters, such as,, low procedural costs.

The perceived *compatibility* of an innovation describes how well it fits into the existing context of values, coexisting technologies, past experiences, and demands of adopters. The higher the perceived compatibility of the innovation, the more likely is its spread among potential adopting units. In the SCGC design concept, compatibility

could be ensured by integrating existing established standards and codes, which underpins the need to review these, carefully. Furthermore, the contents and processes provided by the SCGC have to be state of the art in the field of CSR. The aspired nature of the SCGC as a standardized SCoE moreover ensures cross-organizational compatibility.

Trialability refers to the field work phase, in which an adopter is able to test the innovation and to apply it in a controlled and limited manner, for example in a pilot implementation, thereby learning the particular advantages and building trust into new techniques and processes. Furthermore, trialability assures that new users of the innovation can get to know it by practical experience. The more complex the innovation is, the more newness it carries and the more important is its trialability. Given that, typically, any firm only has one SCoE in place for its entire supplier base, initial pilot implementations are unlikely, in our context, so that trialability matters relatively little. However, the design concept should make sure that it does not create any unnecessary entry or exit barriers for potential SCGC adopters.

Observability denotes how transparent and accessible the effects of an innovation are to others. New adopters that use an innovation might attract additional adopters that could observe the benefits of the innovation. Thus, the higher the perceived observability of an innovation is, the faster the innovation is supposed to diffuse among potential adopters. The SCGC concept could facilitate observability by having the entire initiative, its efforts, and CSP-related results made public. Moreover, new SCGC adopters would presumably be willing to declare their participation in the initiative in public.

High perceived *complexity* of an innovation means that potential adopters find it rather difficult to understand and use the innovation so that the rate of adoption of an innovation decreases, contrarily to the previous effects. By providing simple and straightforward mechanisms and rules, the proposed SCGC concept could be designed in such a manner that is easy to comprehend for adopters.

These initial five factors were mostly confirmed and further elaborated by different studies [e.g., 58, 118]. In their purpose to create valid and reliable scales for measuring Rogers' [100] five characteristics, Moore and Benbasat [86] identified another quality useful for our purposes, namely "image." Defined as "the degree to which use of an innovation is perceived to enhance one's image or status in one's social system" [86, p. 195], there have been vivid discussions about the independence of this quality from relative advantage [e.g., 51]. We incorporate image as an additional sixth factor, as many consecutive studies conceived image as an independent factor [e.g., 86, 118, 125], and as Rogers [100, p. 230] himself acknowledges that "one motivation for many individuals to adopt

an innovation is the desire to gain social status." Stakeholders increasingly demand firms to be socially responsible and grant legitimacy to those firms that behave according to their expectations [116]. In our context, stakeholders can thus be expected to attach importance to the adoption of the SCGC so that image is clearly a relevant factor beside the relative advantage to the adopting firm, itself. The expected image effect of adopting a SCGC will therefore determine the rate of adoption and thus the success of the SCGC. The importance of the image factor means that (a) as a presumably positively evaluated initiative, the SCGC stands a good chance of obtaining positive image effects and that (b) the proposed SCGC design concept should incorporate a feature or mechanism to further foster the initiative.

Against this background and with regard to our research questions, DOI perfectly suits our purpose to develop a SCGC design concept that is able to yield an effective standard in a sense that its adoption and roll-out into business practice is ensured. Thus, we will continuously refer to the established diffusion antecedents in the remainder of our study in order to increase the likelihood of adoption and diffusion of our SCGC design concept.

2.2 A temporal perspective on diffusion

Different firms adopt innovations at different points of time, for two reasons. First, each of the previously discussed innovation-related adoption antecedents (relative advantage, compatibility, trialability, observability, complexity, and image) may vary from firm to firm. For instance, firms which are located downstream the supply chain and which are closer to end consumers, are relatively more in the focus of public interest and their stakeholders than upstream firms [50]. Hence, the relative importance of the image effect will presumably be larger to these firms than to others, leading them to adopt the SGCG earlier. Second, according to Rogers [100], adopters differ systematically with regard to their own innovativeness. Defined as "the degree to which (…) a unit of adoption is relatively earlier in adopting new ideas than other members of a system" [100, p. 267], innovativeness describes the adoption affinity of firms. Accordingly adopters can be categorized into innovators, early adopters, early majority firms, late majority firms, and laggards, based on their innovativeness.

While "innovators" launch an innovation, "early adopters" are often highly respected firms and opinion leaders. By adopting the innovation they yield a lighthouse effect for further adopters (the so-called "early majority"). The early majority is still more innovative than the average unit of adoption. Rogers [100] describes the early majority to be usually about one-third of the total amount of adopters of an innovation. Hence, if an innovation arrives

at this stadium a critical mass is achieved. The critical mass describes the point in time, when enough adopters are present and diffusion becomes self-sustaining [100]. A SCGC as we conceive it is of little utility for a single firm. Due to its interactiveness, all its advantages become relevant only after enough other firms have also adopted it. Hence, a critical mass must be achieved that uses such a standard, because otherwise, single adopters do not benefit enough from the innovation. However, if the critical mass of adopters is achieved, each previous and all later adopters of the SCGC will profit by its further diffusion. Furthermore, from the discussion above it is reasonable to conjecture that firms with higher innovativeness are inclined to adopt an innovation such as the SCGC to higher degrees than those firms that are usually skeptical, such as the late majority or laggards. While some firms that are early adopters and pioneers in the field of CSR will certainly be more active and elaborated in their means of adoption, others will be less proactive. Thus, a SCGC design concept has to consider the variance in innovativeness of firms and in their actual CSP, by incorporating a dynamic perspective for developing firms according to these aspects.

3 Methodology

3.1 The rationale for combining multiple methodologies in the research design

The purpose of this research—the creation of a SCGC design concept—transcends the aptitude of empirical research methodologies since it necessitates the creation of an artificial concept which does not yet exist and thus cannot be observed. Therefore, having identified DOI as an adequate theoretical lense for our research, we required an innovative methodology which can actually create such an artifact. However, an artifact-creating process should not be carried out without taking into account the accumulated scientific knowledge that already exists about (extant) codes of ethics and SCoE. In fact, only a rigorous scientific proceeding stands a chance to generate a SCGC design concept that is acceptable to the numerous parties with interests in SCoE. Consequentially, two distinct methodologies were employed and integrated with each other: a content analysis [cp. 72] of extant research, which serves to integrate the extant accumulated scientific knowledge related to our research aim, and a design science approach [cp. 49, 122] which created the SCGC concept itself, based on the results of the content analysis, the involvement of 34 managers from firms in Germany, China and India and the usage of abductive logic. The research process is depicted in an overview in Table 1, together with all the means that we employed to ensure rigor, in each phase of the research process.

Table 1 Research process overview

Phase	1. Research design	2. Content analysis		
		2a. Sampling of scientific publications	2b. Sampling of codes and standards	2c. Categorization
Major features	Choice of Diffusion of Innovation Theory (DOI) as an adequate theoretical lense Choice of multi-method approach to (1) take extant scientific knowledge into account, (2) take extant practical context-specific knowledge into account, and (3) develop an artificial new concept	Initial focused key word search in clearly related journals to get a working initial sample Focus on papers since 1990 to ensure timeliness Subsequent snowball search to ensure (de facto) completeness Detailed analysis of 166 articles Inclusion of articles with relevant novel insights related to the research questions	Selection of all those codes that were already examined in scientific papers Selection of any code or standard mentioned in interviews and workshops Review of 62 different corporate, regional, business, and international codes of ethics In-depth analysis of 15 widely used supraorganizational codes	Categorization of results into (1) content-, (2) adoption-, and (3) effectiveness-related knowledge Additional qualitative grouping of content within each category Counting of principles pertaining to environmental and social issues Qualitative comparison of the wording of the principles for each topic
Phase	2. Content analysis	3. Design science		
	2d. Synthesis of propositions	3a. Sampling of organizations and individuals	3b. Interaction with corporate experts	3c. Concept development
Major features	Assessment of the content analysis results of each category against the research objectives Usage of abductive logic to determine requirements that the envisioned SCGC would have to fulfill Conclusion of propositions that synthesize these requirements	Firms with ethical problems in their supply chains and with experience with codes of ethics Challenges arising from both social and environ-mental problems Downstream and upstream firms "Western" and "Eastern" perspective: Data collection in Germany, China and India Corporate experts Final sample comprises 20 firms, as well as 34 knowledgeable individuals	Most time-intensive phase Critical assessment and validation of (preliminary) content analysis and results Anticipation of design concept features Interviews to understand the respondents' pristine views Recording of nearly all interviews Workshops with critical and open discussions to jointly tackle specific problems	Compliance with all previously analyzed requirements, as explicated in the propositions Compliance with additional empirical findings Iterative, heuristical and feedback-oriented process Usage of abductive logic Continuous critical discussion of emerging concept Modular solution Future refinements and amendments will still be necessary

The research process is depicted in a quasi-linear fashion only for the sake of readability

3.2 Content analysis

Content analysis is increasingly used within logistics and supply chain management [e.g., 13, 81], as well as business ethics [e.g., 17, 46] to synthesize and integrate the content of large amounts of data in a systematic manner. It is typically conducted as a two-step procedure of sampling and categorization [e.g., 13, 81].

We began our sampling process with a key word search in the databases EBSCO and Science Direct, searching for scientific articles that included terms such as codes of (business) ethics, codes of conduct, codes of business, corporate (ethics) statement, standard(s), and (corporate) guideline(s). Initially, we focused on academic journals that are known for publishing literature concerned with codes of ethics and standards: *Journal of Business Ethics*, *Business Ethics Quarterly*, *Business, Strategy and the Environment*, and *Business and Society*. We focused on articles published since 1990, for the following three reasons: First, according to Kolk et al. [69] most codes did not exist before the late 1970s. Scholarly investigation started even later than that. Second, since knowledge in scientific

journals accumulates over time, we could assume findings from before 1990 to be conserved in newer publications and thus intentionally excluded older research. Third, decades of increasing globalization and of rising stakeholder awareness have changed firms' stances toward CSR so drastically that any empirical research published before 1990 does likely not reflect corporate reality, any more. Having compiled a working initial sample of papers, we iteratively screened titles, abstracts and entire papers to exclude papers based on rigor and relevance criteria. We amended a snowball sampling process by systematically investigating all references of articles we had found so far in order to add further important sources. We only stopped our search when we reached saturation, which means that no further important articles were identified. In total we found 166 relevant articles.

Since our research is firmly routed not only in science, but also in the real world of corporate practice, we also undertook a content analysis of extant codes and standards. This allowed us gain an appropriate overview of the contents and particular principles which are currently included in actual codes. Here, our sampling was as follows: We regarded all those codes that were already examined in scientific papers (e.g., Business for Social Compliance Initiative [31]; ISO 140001 [25]; UN Global Compact [99]). We then amended all those codes and standards which were mentioned in interviews, workshops and informal discussions with company representatives. Thus, we can be reasonable sure that we covered the most important extant codes. Overall, we reviewed 62 different corporate, regional, business, and international codes of ethics and conducted an in-depth analysis of 15 widely used supraorganizational codes (cp. Table 2). Of these, ten are industry-independent and address generally any firm worldwide, while the other five are of industry-specific scope. Similar to the SCGC, supraorganizational codes attempt to create standardized principles which are of general importance for firms in terms of CSR.

Subsequently, the content of the sampled articles was categorized with respect to our research questions. Thus, we used knowledge on code content, on code adoption and on code effectiveness as categories. Almost all of the articles could be classified according to at least one of the categories. For each of the three categories we further considered findings that referred to the same issue jointly, to highlight agreements and disagreements within extant literature. With respect to extant codes, our focus of attention made us count principles pertaining to environmental and social issues, to assess their relative importance in the past. Moreover, we also compared the wording of the principles for each topic in a qualitative manner. The categorized knowledge from extant codes is also depicted in the contents section in the results chapter.

Table 2 Overview of analyzed supraorganizational codes

Name of the Document	Date of issue	Addressees	Scope
The OECD Guidelines for Multinational Enterprises	1976	General	General
The Ceres Principles	1989	General	Environmental
Caux Roundtable Principles for Responsible Business	1994	General	General
FLA Workplace Code of Conduct	1997	General	Social
SA8000	1997	General	Social
UN Global Compact	1999	General	General
Business Social Compliance Initiative (BSCI) Code of Conduct	2002	General	Social
The International Council of Toy Industries (ICTI) Code of Business Practices	2002	Toy industry	Social
Electronic Industry Citizenship Coalition (EICC) Electronic Industry Code of Conduct	2004	Electronic	General
China Social Compliance for Textile and Apparel Industry Principles and Guidelines	2005	Chinese textile and apparel industry	Social
Roundtable on Sustainable Palm Oil Principles and Criteria for Sustainable Palm Oil Production	2007	Palm oil industry	General
Principles and Standards of Ethical Supply Management (ISM)	2008	General	General
Ethical Trading Initiative (ETI) Base Code	2009	General	Social
Global Social Compliance Program (GSCP) Reference Code	2010	General	Social
4C Association Code of Conduct	2010	Coffee industry	General

Last, we assessed the content analysis results of each category against our research objectives. We used abductive logic to determine all requirements that the envisioned SCGC would have to fulfill. Those requirements are synthesized in the form of propositions.

3.3 Design science

Design science is a highly innovative research methodology, which has its intellectual roots in the seminal work of Simon [109, 110]. Since we are aware of only one previous

application within business ethics research [82] and of none in logistics and supply chain management, it is deemed appropriate to depict our methodology in rather much detail. In other fields, for example in information systems research, design science is more established [cp. e.g., 1, 3, 49]. Since multiple insightful and instructive prescriptions for the wider fields of business and management research have appeared in recent years [52, 92, 95, 122, 123], more frequent future usage within our domain appears likely and promising, giving the potential outcomes of the methodology.

The most important feature of design science is that it enables researchers to actually create artificial phenomena, rather than to concentrate only on the ones that exist already [52]. It is thus directed at problem solving, but not at explanation or prediction, and is hence pragmatic in nature [52]. Design is an established process within pragmatic and artifact-creating sciences, such as engineering and architecture [52, 83]. The nature of design processes and of design science features flexibility, orientation toward indeterminate and wicked problems and toward a purpose, nonlinear, but project-based workflows, usage of abductive logic, creativity, and awareness of system-wide consequences of decisions [10, 11, 27]. Due to the complexity of the addressed research problems and its fuzzy nature, design science necessitates close collaboration among researchers and actors in the real world [110].

Since we envision the SCGC as a voluntary instrument (we do not seek to design new regulations) to be adopted by firms, firms are the most important class of actors to this research. Thus, we worked collaboratively with multiple firms and their managers. The first and most important sampling criterion for firms was that all companies were actually facing ethical problems in their supply chains and had some experience with SCoE. We thus made sure that no organization participated that was not troubled by these issues. Moreover, all participating organizations that spent time on supporting our research also faced some opportunity costs, a mechanism that ensured that only suitable firms participated. Second, we made sure that the sample contained both firms that faced ethical supply chain challenges arising from social problems (such as firms H and I, cp. Table 3), as well as firms that were confronted with ethical challenges arising from environmental problems (such as firms K and O). Third, we regarded both firms that operate far downstream, i.e., firms that are directly confronted with end customers' expectations (such as firms D and E), as well as firms that operate far upstream (such as firms P and S). Fourth, it was apparent to us that actors in both developed and developing economies could serve as potential adopters of a SCGC and would likely contribute differing perspectives to the issues at stake. For instance, firms in developed countries might be highly motivated to

Table 3 Participating organizations (firms are headquartered in Germany, unless otherwise specified)

Organization	Description	W^a	I^b
A	A is a large globally active management consulting firm which belongs to the leading strategy consultancies worldwide	x	
B	B is a mid-sized international consultancy primarily specializing in supply chain management	x	
C	C is a mid-sized management consultancy that is specialized on the development of internationalization strategies, in particular with regard to Asia. C is a joint venture of B and another firm	x	x
D	D is a large transportation organization with its focus of operations in the German state of Hesse	x	
E	E is a large internationally operative telecommunications company	x	x
F	F is a large logistics service provider which is mostly active in Germany	x	x
G	G is a large generic drug subsidiary of a large multi-national pharmaceutical company	x	x
H	H is a large apparel manufacturer and among the leading companies in this industry		x
I	I is a large apparel manufacturer and among the leading companies in this industry		x
J	J is a large energy and natural gas public utility company		x
K	K is a large Swedish power company that operates within Europe	x	x
L	L is a large global auditing, product testing and certification company headquartered in UK		x
M	M is one of the leading mail order companies in Europe	x	x
N	N is a large logistics service provider	x	x
O	O is a large Swiss chemical company mainly focusing on specialty chemicals	x	x
P	P is a business unit of a large multinational engineering and electronics company. P is specialized in power tools		x
Q	Q is a business unit of a large multinational conglomerate company. Q is a supplier to the healthcare industry		x
R	R is a large worldwide operating company in the chemical business with sites in Europe, Asia, and America		x
S	S was a large machine manufacturer. S was taken over shortly after the interview and is now controlled by a large US company		x
T	T is a large semiconductor manufacturer	x	

[a] Workshops; [b] Interviews

behave ethically because their ethical impacts are very high; firms in developing economies are often suppliers which face CSR challenges; employees and local

communities in developing economies are parties who are supposed to come into contact with serious CSR-related problems more frequently; and so on. To include these multiple perspectives and to avoid a biased Western view, we conducted interviews and workshops not only in Germany (e.g., with E1 and H1, cp. Table 4), but also in China and India (e.g., with P1 and R1). In total, 20 mostly large and internationally operating firms from diverse industries were included in our study (cp. Table 3).

For firms, the research problem is interfunctional, as well as multifold and complex. Thus, diverse corporate functions, such as purchasing and supply management, logistics, marketing, and public relations, had to be involved. In total, 34 individual managers participated who mostly hold middle-management or top-management positions. The variety of these functions covered the pertinent issues of a SCGC appropriately (cp. Table 4).

Table 4 Individual participant overview

Organi-zation	Partici-pant	Hierarchical position	Responsibility	W^a	I^b
A	A1	Middle Management	Managing Partner	2	
	A2	Middle Management	Partner	2	
B	B1	Middle Management	Project Manager	5	
C	C1	Top Management	Executive Director and Partner	1	
	C2	Top Management	Executive Director and Partner		1
	C3	Official/Staff	Consultant	1	
	C4	Official/Staff	Market Intelligence Manager		2
D	D1	Official/Staff	Marketing/Communications	4	
E	E1	Top Management	Chief Procurement Officer	1	
	E2	Middle Management	Corporate Procurement Strategy	3	1
	E3	Middle Management	Corporate Procurement Strategy	3	1
F	F1	Top Management	Executive Director Supply Chain Services	5	2
	F2	Middle Management	Customer Lead Buyer	4	
G	G1	Top Management	Global Head Sourcing and Purchasing	2	2
H	H1	Top Management	Chief Supply Chain Officer		1
I	I1	Top Management	Global Director Social and Environmental Affairs		1
J	J1	Top Management	Managing Director and Chief Procurement Officer		1
K	K1	Staff/Officials	Materials Management	2	
	K2	Staff/Officials	Materials Management	1	1
	K3	Staff/Officials	Materials Management	1	1

Table 4 continued

Organi-zation	Partici-pant	Hierarchical position	Responsibility	W^a	I^b
L	L1	Middle Management	Director Global Project and Service Management		1
M	M1	Top Management	Chief Operating Officer	1	1
	M2	Middle Management	Corporate Communications and Corporate Responsibility	3	2
N	N1	Top Management	Director Corporate Development and Public Relations	1	
	N2	Middle Management	Head of Staff Unit Finance and Operations	2	1
	N3	Middle Management	Tender Manager		1
O	O1	Middle Management	Director Environmental Safety and Health		1
	O2	Middle Management	Global Senior Procurement Manager	5	2
P	P1	Staff/Officials	Purchasing Manager		1
Q	Q1	Top Management	Director and Chief Procurement Officer Asia and Australia		1
R	R1	Top Management	President and Managing Director		1
S	S1	Middle Management	Senior Manager—Quality Assurance		1
	S2	Staff/Officials	Purchasing Manager		1
T	T1	Top Management	Global Head of Purchasing	1	
Total				15^c	28

[a] Participation in workshop(s); [b] Participation in interviews; [c] Some workshops were held with more than one participant

Our interaction with corporate experts was the most time-intensive phase of our research. It began in 2010 and is still going on, today. The results of the content analysis phase served as a starting point to guide our collaboration. Our first aim in this interaction was to critically assess and validate those (preliminary) results. All insights from the content analysis were continuously open to feedback from company representatives. Second, we anticipated specific design concept features, together with corporate managers. We applied classical empirical instruments, such as open or semi-structured interviews, as well as collaborative tools, such as workshops, within our design science framework. The interviews were particularly instrumental in understanding the respondents' pristine views (nearly all of them were also recorded),[2] whereas the specific advantage of workshops was to critically and openly discuss any specific

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[2] There was no need to employ specific coding procedures. The reason is that we did not study causal relationships between variables (as one would usually have done in empirical case study research, for example), but sought to design the SCGC as a new artifact.

design problems. The development of the design concept was a continuously iterative process and feedback from practitioners was discussed whenever the opportunity arose. Hence, together with them, we framed CSR issues in firms' upstream supply chains, especially in developing economies, and stakeholder demands of buying companies in developing economies as part of the design problem and envisioned the SCGC as a remedy instrument. We also took the (publicly well-known or anticipated) positions of non-corporate actors into account to maximize the chances of success for the SCGC in the real world.

Last, we developed the actual design concept. It had to comply with all previously analyzed requirements, as explicated in the propositions, as well as with important additional findings from our interaction with corporate experts. The design concept development process was iterative, heuristical and feedback-oriented. We frequently used abductive logic, and the emerging concept was continuously discussed critically. The developed concept is comprised of multiple modules. It is clear that future refinements and amendments will still be necessary. We particularly hope for constructive-critical feedback from the scientific community.

4 Literature review

4.1 Contents from previous code research and from existing supraorganizational codes

Several studies have compared the content of different codes of ethics with the aim of generating a general content inventory. In reviewing these studies, we find that all are organized by CSR-related issues, however, at a rather abstract level. There is relative consensus that the most important topics are *labor standards* and *human resources* issues [54, 71, 79, 90], as well as environmental topics [71, 89, 91, 124]. In the first category, *forced labor* [54, 132], *child labor* [54, 67, 68, 132], *non-discrimination* [91], *safety and health* [60, 89], *working hours* and *wages* [91, 124], as well as *freedom of association and collective bargaining* [54, 132] are mentioned very often. In the environmental sphere, the most frequently discussed topics are *obedience to laws and regulations* [90, 91], *control of emissions, waste, and pollution* [60, 90, 132], and the use of *environmental management systems* [91, 124]. More-over, more general statements concerning *resource efficiency* and *responsibility toward the environment* [60, 71, 89, 114] are often reported. In addition, topics such as *anti-corruption* and *bribery* [40, 114], *fair competition* [79, 91] as well as *production or service quality* [60] are deemed important.

As the literature-based review reveals, CSR-related issues exist, which clearly must be addressed in a SCGC because they are typical content of established codes and appear to be virtually indisputable, such as child labor, forced labor, bribery and quality issues. These CSR core contents should reasonably be included since the SCGC is intended to be a general standard.

To further elaborate on the content side of codes of ethics, besides reviewing previous research, a review of supraorganizational codes was conducted in order to back up the above-stated findings and to apply them to our particular purpose in the subsequent passage. An overview of the results is illustrated in Table 5. Although only few codes state the same concrete principles, the set of topics and categories of principles is rather homogeneous. There appear to be differences in wording rather than in substance. In both the social and the environmental dimensions, a significant core of content appears to exist. For instance, the seven most frequently stated social principles reach relative prominence values of between 64 % (working hours) and 93 % (non-discrimination), whereas relative prominence values for the first seven topics in the environmental dimension range between 50 % (environmental precaution, environmental risk management; energy conversation and reduction) and 88 % (disposal and waste reduction). This homogeneity is likely caused by extant widespread initiatives, regulations and certificates in the social and environmental dimensions. In the field of human rights and social and workers rights, the Universal Declaration of Human Rights (1948) and the conventions of the International Labour Organization, especially the Declaration on Fundamental Principles and Rights at Work (1998), have gained global attention and recognition and thus serve as a benchmark. Many codes explicitly refer to these (e.g., UN Global Compact, Business for Social Compliance Initiative Code of Conduct) or sometimes refer to the occupational health and safety guidelines and management systems ILO-OSH 2001 and OHSAS 18001. The same applies in the environmental sphere regarding ISO 14001, which is an environmental management system with increasing international acceptance. Although ISO 14001 does not state principles, the way codes of ethics do, in its annex, the standard provides a comprehensive list of environmental topics which firms are expected to take into account if they want to diminish negative environmental impacts:

> "Consideration should be given to aspects related to the organization's activities, products and services, such as design and development, manufacturing processes, packaging and transportation, environmental performance and practices of contractors and suppliers, waste management, extraction and distribution of raw materials and natural resources,

Table 5 Results of the content analysis of supraorganizational codes

Explicitly stated principles in the 15 codes	Count	Prominence in total (%)	Relative prominence (%)
Environmental (n = 8)			
Disposal and waste reduction	7	47	88
Use of natural resources	6	40	75
Generic environmental responsibility (n = 9)	6	40	67[a]
Environmental friendly products and practices	5	33	63
Emissions and pollution	5	33	63
Environmental precaution, environmental risk management	4	27	50
Energy conversation and reduction	4	27	50
Biodiversity protection	3	20	38
Exposure to hazardous substances	3	20	38
Water conversation, reduction	3	20	38
Social (n = 14)			
Non-discrimination	13	87	93
Child labor	12	80	86
Freedom of association and collective bargaining	11	73	79
Forced, compulsory, bonded labor	11	73	79
Workplace safety and health	11	73	79
Remuneration, benefits, wages	11	73	79
Working hours	9	60	64
Disciplinary practices, human treatment	7	47	50
Regular employment	5	33	36
Miscellaneous (n = 15)			
Compliance with local, national and international laws and regulations	11	73	73
Transparency, disclosure, informing stakeholders	7	47	47
Safe processes, products, services	5	33	33
Stakeholder participation and dialog	5	33	33
Corruption, extortion, bribery	4	27	27
Fair business and competition	4	27	27
Develop long-term strategies	4	27	27
Respect human rights	3	20	20
General ethical statements	3	20	20
Economic and financial responsibility	3	20	20

[a] The principle was also mentioned in a code with a social focus (FLA workplace code of conduct); thus, 6/9*100 % = 67 %

distribution, use and end-of-life of products, and wildlife and biodiversity" [55, p. 12].

Other codes were found to have combinations of these environmental topics included, but no substantially differing topics.

The four miscellaneous topics that most frequently reoccurred in our analysis included: compliance with local, national and international laws and regulations (77 %); the call for transparency and disclosure with regard to stakeholders (47 %); saving processes, products, services (33 %); as well as stakeholder participation and stakeholder dialog (33 %). The prominence of the principle of compliance with local, national and international laws, as well as a priority of legal regulations over code content in cases of conflict, follow from the nature of codes of ethics: They are means of self-regulation which create normative behavioral guidelines where legal regulations do not exist. Thus, in case topics are already mandatorily regulated, these laws are binding. Firms' transparency and the disclosure of information is a precondition to enter the discourse with stakeholders, as it is integral part of the CSR definition.

As the results demonstrate, the analysis of existing supraorganizational codes validates and specifies what the literature review indicated: a relatively stable inventory of substantial topics and principles can be found in the field of codes of ethics. Some principles, such as non-discrimination, the prevention of child labor, or demands to reduce waste, pollution and emissions, are even indisputable in the field of CSR. Moreover, certain further topics could also be included in a SCGC, for example the orientation toward existing legislation and regulations, stakeholder involvement, or product, process and service safety. In order to serve the purpose of developing a global standard, it would be advisable for the SCGC to include all these stipulations.

4.2 Adoption

In addition to analyses and comparisons of code contents, a prominent research stream refers to firms' adoption of codes. In line with many other scholars [e.g., 94, 106, 128, 129], Kaptein [61] indicated that commitment to the code by senior and local management is the most important antecedent for adopting a code of ethics and reducing wrongdoings. Management commitment is a precondition for organizational change, and managers' perceptions of the role of business in society shape firms' actual CSP to a great extent [9, 93].

Adam and Rachman-Moore [2] investigated the role of formal, informal, as well as personal factors in enabling a successful adoption of codes. They determined that rather informal methods such as social norms of the organization

or a positive managerial role model have the largest impact on adopting a code of ethics. Similarly, the function of leaders as ethical role models by emphasizing top managements' ethical tone and example-setting as crucial to an ethical corporate atmosphere is highlighted [112]. Furthermore, it is important to "enact a living code (…) by focusing on the multiplicative interaction of internal authentic leadership, aligned processes, and ethical organizational culture" [126, p. 28].

Presumably the most decisive aspect of code adoption for firms is the provision of relative advantages. Hence, one major stream of scholarly research deals with reputational advantages as a main reason for code adoption [94]. Firms that are successful at ensuring their CSP finally benefit from increased market shares and potential shareholder investments [66, 98], in particular if they manage to dissociate themselves from potential greenwashing firms. Every firm, which intends to adopt the SCGC, also has to be aware of substantial advantages for doing so. Without clearly visible relative advantages, also in comparison with established initiatives, such a tool is unlikely to gain enough followers since the adoption of multiple codes leads to procedural costs and is quite time intensive [59, 94, 113].

Another relative advantage of code adoption was found by Colwell et al. [21] who performed an inquiry concerning the impact of code enforcement in dyadic relationships. They determined that buyers commit themselves to maintain dyadic relationships with code compliant suppliers rather than with non-compliant ones. Therefore, both suppliers and buyers have a high interest in code compliance since relational relative advantages—such as those linked to prolonged and more collaborative buyer–supplier relationships—should result from it. Three kinds of relative advantages of code adoption and compliance thus might occur: reputational advantages with regard to stakeholders, relational advantages in dyadic relationships—upstream and downstream the supply chain, and intra-organizational advantages, resulting from reduced procedural costs.

When investigating the application of Western codes in China, Hanson and Rothlin [42] found that many firms do not adjust their codes to cultural and national characteristics. The underlying reason was identified by Logsdon and Wood [78] and Talaulicar [117] who pointed to difficulties of firms in following universal ethical principles while concurrently respecting cultural and national differences. They viewed this issue as a particular problem for the sphere of codes of ethics, since these express universalistic core values. Thus, global standards with universal principles should be created [78]. Most of the already existing initiatives and codes, such as the United Nations Universal Declaration of Human Rights (1948) or the OECD Guidelines for Multinational Enterprises (1976), clearly point into this direction, as well.

Acceptance and legitimacy of codes of ethics mark another stream of research. For instance, Mueller et al. [87] analyzed how global standards can gain legitimacy so that they are widely acceptable and thus adoptable. Five legitimacy criteria combining input and output legitimacy [29, 107] were identified [87]: (1) *inclusivity*, the integration of relevant stakeholders; (2) *discourse*, developing potential criteria of standards in a process of communication; (3) *control*, achieved by certification and accreditation; (4) *supply chain*, integrating all adopters in moving a product or service from supplier to customer; and (5) *observability* (referred to as "transparency" by Mueller et al. [87]) of the results and processes toward stakeholders. Specific insights related to each of the five legitimacy dimensions can be amended. By improving *observability* (5) through control of certification processes and results (3), legitimacy of codes is expected to increase [87]. The more knowledge stakeholders have of what the code actually seeks to achieve and how it functions, the more trust they will build toward the initiative and the more likely are they to actively participate in it (1). Moreover, firms presumably will not be willing to comply with self-regulatory means if the processes and results are not observable.

Gilbert and Rasche [36] approached the generation process and adoption of standards and codes from a Habermasian discourse ethics point of view. They claimed that all affected stakeholders should be given an opportunity to participate in defining how such documents are worded (2). In their opinion, stakeholders must be able to at least agree with the potential result, which means that they should be given a chance to join the discourse. Otherwise, these principles would not be justified: "Only those norms can claim validity that could meet with the acceptance of all concerned in practical discourse" [39, p. 41].

Furthermore but rather pragmatically, supply chains were ascribed a multiplier effect regarding the diffusion of environmental and social standards, as long as relevant members of the supply chain are involved in the process of generating these (4) [4, 23, 87]. The inclusion of these co-innovators fosters *compatibility* of the SCGC and might simultaneously increase its *simplicity*[3] as those that will be using the innovation have a voice in the generation process of the SCGC.

4.3 Effectiveness

Since codes of ethics serve to improve CSP, effectiveness of codes forms a third pillar of code research. However, results differ, and the role codes play in improving CSP is

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[3] We replaced the DOI factor "complexity" with its opposite, "simplicity", so as to have only positive effects in the causal model that we seek to develop.

not obvious [47, 62]. The overall effectiveness of codes for governing CSR is sometimes even doubted [7]. In accordance with other studies [18, 108, 121, 127], Bondy et al. [7] emphasized that codes of ethics should be recognized as supplements to regulatory and additional self-regulatory means. Hence, a mixture of both regulatory and self-regulatory means is required to increase CSP. This perspective is in accordance with other studies that found that the mere existence of a code does not significantly affect (un)ethical behavior at the workplace [56, 102, 111, 128]. Rather, the quality of communication activities associated with the code moderates the effectiveness of the latter [61]. Further measures to increase the effectiveness of codes of ethics frequently highlighted by scholars are training programs [111, 115]. Trainings are considered to be "a way of institutionalizing ethics in the organization" [115, p. 388], which provide people with patterns of guidance in cases of ethical dilemmas or situations in which they have to make decisions with regard to code topics [56, 111, 120]. Ethical behavior is a continuous learning and application process. "The job is never done," as Kaptein and Wempe [63, p. 863] put it.

Besides trainings and communication, sanctions and surveillance systems play an important role as drivers for code effectiveness [34, 48, 73, 76]. To prevent non-compliance, the balance of potential costs and benefits should lead to deterrence by making the respective actors aware of the sanctions (costs) they will have to bear in case of non-compliant behavior [43, 74, 130]. Conversely, incentive measures, such as rewards, can lead to the fostering of compliance [119]. With reference to Lenox and Nash [75], Wright and Rwabizambuga [133, p. 91] stated that voluntary self-regulations that do not employ explicit sanctions can even lead to adverse selection problems as "institutions will join to claim the benefits of enhanced reputation with no intention of actually implementing their new commitments." Furthermore, Pedersen and Andersen [94] argued for direct sanctions, third-party monitoring, and enforcement as effects that trigger the effectiveness of codes.via reputational effects [94].

However, sanctions, monitoring, and audits—enforcement systems in general—are not the only measures of preventing supplier opportunism. Trust and goal congruence between buying firms and suppliers also play an important role as safeguards for code compliance as they enable closer relationships and hence make SCoEs more effective [30, 57, 94]. Jiang [57] and Egels-Zandén and Hyllman [30] stated that these two aspects may be achieved by continuous communication and coordination between all relevant code parties. With regard to the aforementioned compliance and enforcement systems, Weaver et al. [128] and Locke et al. [77] drew comparisons between compliance and commitment oriented approaches. While compliance approaches are based on negative rules, such as pressures, regular monitoring and severe sanctions, commitment approaches to ethics focus on positive values, such as learning, collaboration, analyzing root causes to problems, as well as incentives and mutual respect. Both studies emphasized that these approaches do not present an antagonism but are complementary and, if exercised together, might achieve desired outcomes [77, 128].

Last, scholars found that an effective SCoE has to comprise the following features: workability, observability (referred to as "transparency" by Emmelhainz and Adams [33]), monitorability, and enforceability [33]. It is these features which might most improve existent codes that are found to be "lax in the area of monitoring and enforcement" [33, p. 56]. Additionally, it was suggested that most SCoEs "still lack substantial detail" on the content side [33, p. 56]. Kolk et al. [69] point into the same direction as they regarded content specificity and means of compliance as SCoE quality criteria. Content specificity relates to the degree, to which contents stated in the code are concretized and measurable.

4.4 Literature-enhanced causal model of SCGC adoption

This section serves to show how the context-unspecific antecedents of SCGC adoption derived from DOI can mostly be achieved by incorporation of important design features that we synthesized from extant SCoE research. We express these design requirements in the form of six propositions.

As a first important antecedent to multiple adoption-fostering factors, we have identified the aspect of content coverage and specificity. High content coverage of relevant CSR issues fosters the *compatibility* of the SCGC with extant firm structures and processes, as well as with previously used SCoE. By covering all relevant contents that are already taken up by other codes of ethics, standards and CSR initiatives, the SCGC can easily be adopted by firms that use one or more of these CSR measures. Moreover, covering all relevant topics increases the *image* of the SCGC as stakeholders then perceive the code to be a complete and effective measure of increasing a firms' CSP. If some important principles were missing in the SCGC, the code would certainly not be accepted by society, stakeholders and firms, but rather suspected to be an instrument of greenwashing. Moreover, the image is expected to increase through content specificity: If the SCGC provides a high degree of detail in a sense that it allows for effective verification of adopters' compliance, adopters' opportunism is likely to decrease. Furthermore, specificity of the content of the SCGC ensures that content is not confusing and/or redundant and thus effective. This

fosters the *simplicity* of the SCGC. Last, the full coverage of relevant CSR topics in a high degree of specificity enables firms to increase their CSP without using other measures than the SCGC. This implies *relative advantages* for adopters in terms of reputational benefits and savings of process costs associated with adopting other codes and standards than the SCGC. As a result, we propose

P₁: If a SCGC covers all topics and principles in the area of CSR that are (1) undisputed and which (2) regularly occur in supraorganizational codes and if (3) the content has a high degree of specificity in order to facilitate the measurement of compliance with the code, then relative advantage, compatibility, simplicity, and image of the SCGC will be fostered.

Next, we argue, based on the literature review, that relevant stakeholders and firms upstream and downstream the supply chains should be involved in the process of developing the SCGC and that coordination with these stakeholders will be required once the SCGC has become effective. DOI already informs us that including stakeholders in the generation process ensures the legitimacy of the SCGC. If stakeholders such as buying firms, suppliers, or NGOs have the option of participating in the development process, the SCGC will likely have a positive *image* among stakeholders in comparison with initiatives that were created top down. Second, the inclusion presumably also fosters the *compatibility* of the SCGC as experts in the field of CSR, such as International Organizations and NGOs or individual persons, are able to induct their expertise in its development. These expert groups are likely to know the major other standards and codes intimately and can thus prevent incompatibility. Moreover, coordination concerning the SCGC in its entirety, allows adopting firms to establish goal congruence concerning the initiative. Channels for stable exchange about ideas and problems in the field of CSR should result in *compatibility* and *trialability* with respect to CSR initiatives in general and among each other in particular. New developments like newly emerging CSR-related contents can immediately be discussed and tested or directly incorporated into the SCGC if coordination among SCGC relevant stakeholders and adopters is provided. Last, the inclusion and coordination of adopters and stakeholders is likely to lead to as much *simplicity* of the SCGC as is possible. Hence, we propose

P₂: If (1) relevant stakeholders and firms upstream and downstream the supply chains are included in the discourse of developing a SCGC and (2) if these parties are coordinated with regard to goals and requirements of the SCGC, then trialability, compatibility, simplicity, and image of the SCGC will be fostered.

Communication activities and trainings regarding codes of ethics have empirically been found to increase their effectiveness. In line with DOI both means are supposed to foster the diffusion of the SCGC. Trainings and communication provide employees with practical knowledge of the SCGC and thus help to increase *trialability* and *compatibility* of the initiative. Employees of adopting firms are immediately able to react to any problems of the SCGC initiative. Through communication, contents and processes become aware for employees and can then be linked to other CSR practices and initiatives via trainings. Additionally, the SCGC gains *simplicity* through trainings and communications. Frequently keeping awareness for the SCGC fosters its institutionalization such that employees are intuitively guided in ethical dilemmas with code-conform solutions. Furthermore, frequent communication about the contents, processes and results of the SCGC ensures *compatibility* as adopters' awareness for the SCGC increases such that they are immediately able to discuss any ideas and issues regarding the initiative. Therefore, we propose

P₃: If the SCGC and its contents are frequently communicated well, and if regular training of employees and management regarding SCGC-related issues occur, in order to increase code awareness and thus its effectiveness, then trialability, compatibility, and simplicity of the SCGC will be fostered.

A SCGC that is globally applicable can first of all be expected to be *compatible* with extant firm processes, structures and SCoE. Second, a globally applicable standard for ethical supplier management—as the SCGC is supposed to be—incorporates universal aspects as well as regional (contextual) particularities. This feature builds trust in NGOs, International Organization and other stakeholders and thereby fosters the *image* of the SCGC. Moreover, through its global applicability it provides *relative advantages for adopters* as further codes and standards for different cultural regions or contexts become redundant so that procedural cost savings can be achieved. Thus, we postulate

P₄: If a SCGC is designed in such a way that it balances universal principles with local adjustments without losing its ability of being globally applicable, and if the SCGC design is assessed against a plurality of cultural and regional norms, then relative advantage, compatibility, and image of the SCGC will be fostered.

Scholarly research on the effectiveness of codes of ethics has identified enforcement systems as safeguards of

adopters' compliance. Since stakeholders and society at large are cleary interested in the effectiveness of SCoE in general, a highly effective SCGC will also feature a positive image, in accordance with DOI. Given that the majority of codes of ethics have no enforcement system in place, many stakeholders are skeptical of their utility in increasing firms' CSP. As stated above, codes and CSR initiatives are sometimes even suspected of being measures of greenwashing. The intended SCGC must thus be able to provide means of effectively ensuring adopters' compliance such that stakeholders are building trust in the initiative. The more stakeholders agree upon the effectiveness of the SCGC, the better the *image* of the code becomes. Hence, we postulate

P_5: If the SCGC features a sophisticated enforcement system, consisting of a deviance detection mechanism, clearly defined sanctions, and an incentives scheme to foster effectiveness, then the image of the SCGC will be fostered.

Last, as directly derived from the literature review, we postulate that the SCGC has to provide *observability* throughout the entire initiative. High *observability* of all SGCG-related rules (e.g., referring to enforcement, certification processes, and results) also increases its legitimacy among stakeholders and especially adopters. Firms and stakeholders are likely to build more trust in a SCGC if they observe how it functions. Therefore, we propose

P_6: If the SCGC features easily observable contents, processes, and results such that they are controllable by internal and external bodies, then this will foster its adoption.

Figure 1 summarizes the six propositions and gives an overview of the literature-enhanced causal model of SCGC adoption that we developed. Having referred to the body of scientific knowledge that we sampled and categorized

through the theoretical lens of DOI, it was possible to include the dimensions of content and effectiveness in a superordinate model of SCGC adoption, thus interlinking our three research questions. Moreover, for five of the adoption antecedents derived from DOI (relative advantage; trialability; compatibility; simplicity which is absence of complexity; and image) it was possible to use the categorized literature in such a manner that it informs us precisely *how* these antecedents can be achieved in our research context, as expressed in the six propositions.

Literature has informed us that top-management commitment is also an important driver of SCoE adoption. Since this finding was not directly derived from DOI, we considered its place in our causal model. While propositions P_1 to P_5 relate us to antecedents of the adoption drivers that DOI informs us about, and while P_6 refers us to a DOI factor as such, we find that management commitment is an effect of DOI factors, rather than its cause: If a firms' top management perceives the SCGC to be relatively advantageous, compatible with its structures and processes and to possess a positive image, then it will commit itself to adopting the SCGC. By having ensured relative advantage, compatibility and image through P_1 to P_5, top-management commitment will also be ensured. Thus, our causal model derived from DOI and enhanced by extant literature reflects a comprehensive view on theory-deduced requirements for the design of the SCGC.

5 Insights from corporate experts on the key success factors of the SCGC design

Insights from the content analysis were continuously open to iterative feedback from corporate partners. Yet, the previously stated six propositions were supported and validated. In particular, certain aspects, which we had already elaborated on in the literature review, were

Fig. 1 Literature-enhanced causal model of SCGC adoption
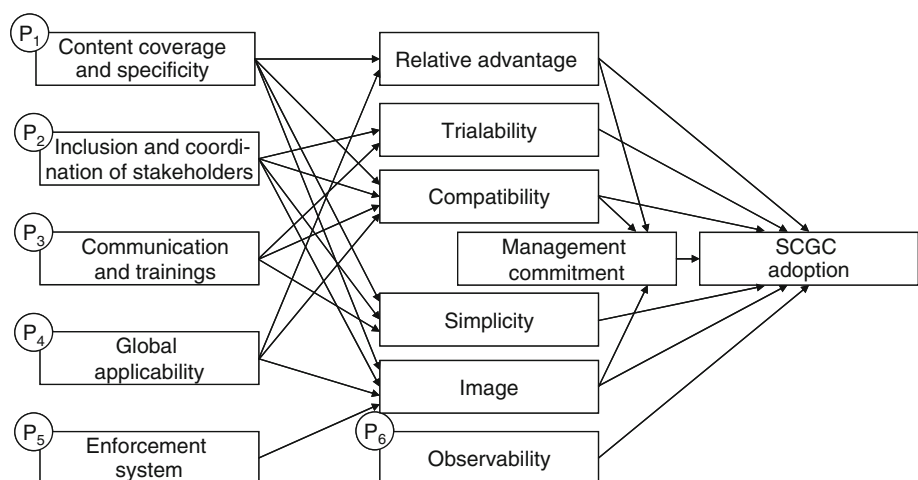
explicitly emphasized and interviewees gave us important insights for developing a design concept of the SCGC. However, corporate experts also contributed additional insights for the development of the SCGC design solution.

5.1 Content: a dilemma between specificity of the SCGC and its general applicability

In almost all discussions concerning potential contents and principles of a SCGC, we arrived at a crucial meta-level: what is the right degree of abstraction to be applied to the code in order to maintain its universal applicability? The same conclusion can also be drawn from the results of the literature review: From P_4, we learn that a SCGC has to balance universal principles with local adjustments without losing its ability of being globally applicable. However, according to P_1, a SCGC also requires content specificity, in order to define clear criteria for assessing compliance. Together, these two requirements pose a major design challenge for the SCGC: The higher the specificity of the SCGC contents, the lower is its applicability in different contexts and vice versa. Contexts can differ by industry, firm size, or culture. For instance, the specificity of requirements concerning the exposure to hazardous substances will obviously differ in between contexts of chemical or pharmaceutical industries and the sporting goods industry context. The same applies to assessment criteria concerning firms' actual CSP. Some companies are located in industries which by nature cannot achieve the highest levels of CSP in terms of outputs, although their efforts may be honorable. At the outset of our research, there was widespread consensus between scholars and practitioners that a strict prescriptive model of the SCGC was required in which the degree of achievement of each principle would be measurable and quantifiable, independent of the context. However, over the course of the study, this particular idea was given up. In addition to the difficulty of quantifying social phenomena, which was already conceived as hardly solvable, the main argument is that absolute terms are not qualified for an assessment of the CSP of firms located in different industries as they are not comparable. Benchmarks of what is considered to be ethical vary greatly among industries. Hence, if a SCGC and its measurement system are created in a context-independent manner, some firms will always fall far short of others. Imagine a comparison between a coal power station that emits enormous amounts of carbon dioxide and an IT provider that does not. Besides the problem of measuring the real value of produced carbon dioxide, how many tons mark the border between social responsibility and non-responsibility? Next, weighted criteria, according to the industry in which they are applied, were conceived as an alternative. Such an approach would necessitate a definite

allocation of each organization to an industry. However, firms often supply many different industries so that a single firm would have to be assessed according to multiple criteria and relational values, each time with only a fraction of its entire business activities. Moreover, although industry standards or industry-specific add-on modules might be a viable option to tackle the problem of abstraction versus specificity, this options bear the risk of losing track to develop *a single* SCGC.

Similar problems arose with regard to firm size and normative issues as contexts. Since several performance criteria could be difficult to assess for firms with little human resources and limited technical capacities, the applicability problem might also occur with regard to firm size. Furthermore, most of the practitioners in Germany expressed the opinion that the SCGC might not only be seen as a minimum standard but that it also has to convey some normative values. Democratic rights of participation, equality of women and men, freedom of religion, etc. are fundamental human rights that are also integral parts of the United Nations Universal Declaration of Human Rights. Although there was general agreement that protection of these principles belongs primarily to the sphere of legal regulations and political law-making, German experts emphasized that human rights aspects ought to be incorporated, at least in a SCGC preamble. The same was stated with regard to certain contents that are not globally accepted. Western firms operating in the pharmaceutical, chemical or food industry are, for example, aware of the importance of animal care issues, not just because of customer pressures which are rooted in Western values that ascribe animals certain rights. Animal rights are, however, not (yet) universally accepted. Thus, although P_1 requests to include all relevant topics in a SCGC, these must be carefully screened and selected, and an institutionalization of possible SCGC adjustments must be foreseen in order to react to future developments.

Furthermore, as an important insight concerning the content side, it was added that in terms of fair wages and remuneration, a negative formulation of the very principle would be favorable: Whether conditions are considered to be fair depends on different working contexts. Thus, the majority pledged for stating the prevention of (financial, physical and psychic) exploitation as a concrete principle of the SCGC. A similar problem occurred regarding the rights of workers to organize themselves in unions. As some countries explicitly prevent the foundation of unions, the SCGC might take this into account. A principle regarding this issue might state that unions should not be prohibited by firms.

Last, as already stated above, participants encouraged to explicitly incorporate the well-established environmental standard ISO 14001 into the SCGC, as this management

system conjoins many of the environmental issues found in CSR-related codes.

Generally speaking, it became evident, that a SCGC will not start with a blank slate. As an audit expert from organization L (L1) stated: "to generate a standard for the future that faces only little resistance, one should have the opportunity to incorporate (other codes and initiatives). That sometime in the future only (the SCGC) exists—that would of course be the ideal case—but on the way to that, others should not be excluded, but taken along." As the neglect of other CSR initiatives would illustrate myopic hubris, the SCGC has to be able to incorporate these in any manner.

To sum up, even though there appears to be an inherent dilemma, assessment criteria for CSP in the SCGC are desired to be both abstract and contextualizable. The SCGC must find the right way of balancing normative demands and prescriptive requirements, since a code that is too demanding might demotivate those people affected by it and might be seen as "a collection of empty promises" [63, p. 859].

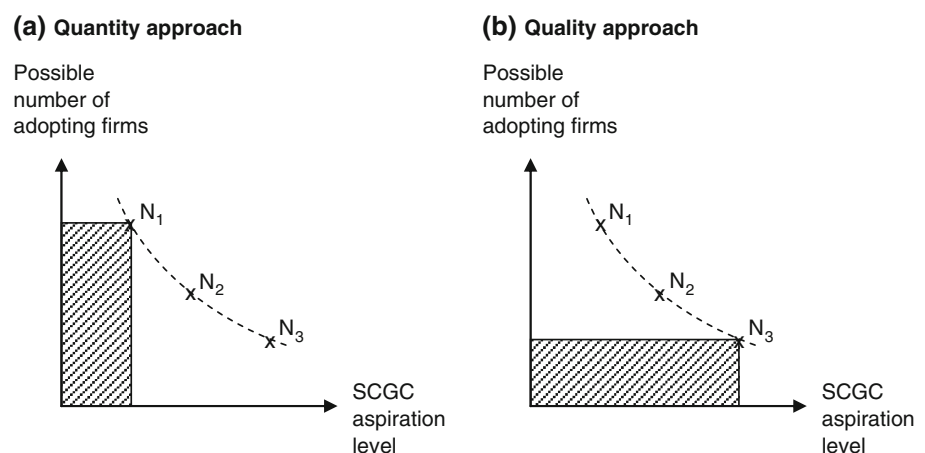## 5.2 Adoption: persuading as many firms as possible to join the SCGC

In our collaboration with practitioners, there was consensus early on that the SCGC initiative has to be adoptable by a high number of firms, as well as by firms with divergent CSP if its adoption was to be successful. Since the main purpose of the SCGC is to foster CSR on a global scale as much as possible, the fact that firms differ greatly in terms of their CSP has to be considered, practitioners advised. Moreover, the SCGC will only be able to become a standard for ethical supply chain management if it features the capacity to capture as many adopters as possible. In accordance with DOI [97], experts stated that a critical mass of adopting firms has to be acquired to trigger other firms to join the SCGC. At the macroeconomic level, CSP

can be disaggregated into two factors: quantity (of ethical firms, especially SCGC adopting firms) and quality (which refers to each firm's actual CSP). Hence, the desired SCGC aspiration level intuitively presents itself to be a quantity-quality dilemma: The lower the aspiration level of the SCGC, the higher the possible number of SCGC adopting firms. The higher the aspiration level of the SCGC, the lower the number of SCGC adopting firms (cp. Fig. 2).

More precisely: If the SCGC was designed in such a way that its aspiration level was rather low, hypothetically, many firms would be capable of adopting it ("quantity approach," cp. Fig. 2a). For instance, low barriers in terms of requirements to adopt the SCGC and to comply with it together with neglectable or missing enforcement mechanisms decrease the quality of the SCGC initiative and deteriorate its image. Thus, by enabling laggard firms to comply with the initiative, such an approach would only foster ethical supply chain management by the pure quantity of possible adopters. Many firms that have not yet implemented CSR practices or that are at an early stage regarding their CSP will nevertheless be able to join the SCGC initiative (cp. N_1 in Fig. 2a). Regarding the diffusion of the SCGC initiative, it is assumed that the pure mass of adopting firms might convince further firms to take part. However, especially firms that by far outreach the hypothetical low aspiration level (cp. N_1 in Fig. 2a) stated that they would have no incentives to join. They are usually innovators or early adopters of CSR and already have a high CSP. Most of them take part in other CSR standards and codes of ethics, which have a higher aspiration level and which thus provide adopters a better image. For them, such a SCGC design would provide only marginal or even no additional (foremost reputational) advantages, but might impose additional costs.

The inverse problem would occur, if the SCGC had a high aspiration level ("quality approach") as the number of possible code adopting firms would then be limited (cp. Fig. 2b). In this case, only those firms could be addressed

Fig. 2 Quantity-quality dilemma of SCGC aspiration level

(a) Quantity approach

Possible number of adopting firms

N_1

N_2

N_3

SCGC aspiration level

(b) Quality approach

Possible number of adopting firms

N_1

N_2

N_3

SCGC aspiration level

that already spend much effort on CSR and that have a high CSP. Challenging content-related barriers in terms of requirements to adopt the SCGC and to comply with it together with strong enforcement mechanisms would strengthen the quality of the SCGC and thereby ensure a high level of ethical supply chain management for the firms that are able to adopt the SCGC. Since only a small number of firms with a high CSP would be capable of adopting the SCGC, it would presumably have an excellent image and would be conceived as a benchmark in the field of CSR-oriented codes. If this was the case, concerning further diffusion, firms would likely perceive the SCGC initiative as a means to distinguish themselves from their competitors, and thus have an incentive to be part of it. However, many firms that have not yet implemented CSR practices or that are at an early stage regarding their CSP would not be able to join the SCGC initiative (cp. N_1 in Fig. 2b).

As one of the main insights concerning the adoption of a SCGC, experts agreed that the management of firms quite often will not be convinced to act responsibly by legal or ethical reasons alone. Thus, economical arguments that depict a business case for the SCGC and CSR might be a useful trigger, experts said, in concordance with the relative advantage factor identified from DOI. Although such arguments have been criticized in that they do not suffice in achieving complete CSR [28], visible benefits of participating in the SCGC initiative will leverage the adoption and diffusion of the SCGC. Practitioners highlighted the reduction in procedural costs, as well as potential reputational benefits as relative advantages and thus adoption facilitators of the SCGC. As one reoccurring example, firms referred to the common phenomenon of "audit fatigue"—a traceable refusal to conduct or to be subject to further audits, which follows from the plurality of extant SCoE, as discussed in the introductory chapter: The task of controlling suppliers' compliance with all requirements causes intensive efforts for the buying firm, as well as for the controlled suppliers. In the worst case, a supplier is audited by multiple buying firms with regard to the same issues several times over a short time period. This is a very ineffective side effect which could be prevented by unified audit criteria, continuous information exchange, and observability. While some experts (B1, F1, G1) initially feared that a SCGC would be yet "another code of many" which causes extra audits, others immediately recognized the standardization potential behind the idea which ideally would decrease the number of audits in the long term, as is the case in industry-wide initiatives. The majority of practitioners were convinced that if a SCGC could actually combine crucial aspects of all foregoing initiatives and if it incorporated a standardized auditing mechanism, the total amount of audits would be reduced.

With regard to reputational benefits, one expert (O2) stated: "Firms, which already possess a strong brand or a brand under establishment, should have incentives (to join the SCGC initiative)" Since the SCGC goes beyond what is legally required, stakeholders with pronounced interest in CSR will ascribe adopters a positive intention and willingness toward this issue. A challenging SCGC that effectively prevents unethical behavior thus presents a source of reputational benefits for firms that adopt the SCGC. In particular, if the SCGC provides enforcement mechanisms in a sense that non-compliance will be sanctioned and thus greenwashing prevented, adopting firms might profit from the positive image of the initiative, professionals affirmed. By proactively engaging in CSR initiatives, firms have the opportunity to distinguish themselves from their competitors.

Furthermore, corporate experts pointed to another interesting perspective on benefits of a SCGC: Besides positive advantages, firms often also highlight potential risks that occur with increased CSR demands from stakeholders, in particular in their supply chains. Procurement professionals emphasized the fact that the degree up to which any buying company is in a position to effectively control the compliance of its suppliers (by monitoring, audits and certificates) decreases with vertical supply chain complexity, i.e., the farther away suppliers are located from the company in the supply chain. H1 reported: "With more than 60,000 goods per year, you cannot credibly propagate to buy every small product ethically. You have to draw the line after the third tier level and admit that you act to the best of your knowledge and belief, but that you are not perfect." However, buying firms are continuously held responsible for what happens at their suppliers' sites [5]. Experts were thus convinced that a SCGC can also be understood as a useful tool for CSR-oriented supply chain risk management since it guides firms' procurement decisions in a CSR-oriented manner.

5.3 Effectiveness: internal and external support for the SCGC

In discussion with corporate experts, it was frequently emphasized that the SCGC is most likely to be successful, if it receives strong internal and external support. Firms are more likely to join the SCGC initiative if it is trustworthy and stakeholders are expected to appreciate an observable initiative.

As we already concluded from reviewing the literature, codes of ethics require internal support in the form of top-management commitment to become embedded in the culture of firms. Practitioners underscored this proposition by pointing out that although procurement divisions enjoy a high degree of independence regarding their buying

decisions, commitment by the executive management level has to be given in order to follow codes or strategies. As one Chief Procurement Office (CPO) (G1) explained, "Grand moves cannot be adopted without the Chief Executive Officer (CEO), regardless of how ambitious a CPO or a division may be." CSR policies have to be anchored in a firms' corporate culture in order to be effective. Implementing a CSR culture is a continuous learning process which requires enduring commitment and investments. Since these aspects do not pay off in the short term, firms are biased toward avoiding them in order to maximize (short-term) shareholder value. Frequently, only a CEO or senior management can approve such strategic investments, the experts' tenor was. Thus, if firms actively strive for CSR, they usually promote it to an integral part of corporate strategy and strive to continuously raise their level of CSP. Furthermore, interviewees agreed upon the idea that the SCGC would also be able to acquire strong external support from a highly respected International Organization, such as the United Nations, the International Organization for Standardization, or another influential and well-respected institution. To disseminate a new initiative and to promote it as a widely accepted standard for ethical supply chain management requires support. Because many codes are already in use, high entry barriers for new emerging codes exist. If, for instance, the United Nations supported the SCGC, a high degree of credibility in the initiative could be achieved that in turn facilitates overcoming these barriers. Managers that recognize the very organization as reputable will build trust in the SCGC and in turn might have a higher probability of adopting the code. The idea to engage a highly respected sponsor organization would certainly foster the image of the SCGC and thus facilitate adoption and diffusion, in accordance with DOI.

Furthermore, in order to get the strongest credibility and support, firms' and society's aspiration in the SCGC have to be aligned. If the initiative is accepted and respected by society due to its overall positive effects for CSR and simultaneously bears advantages for firms, then a win–win situation can arise. Concerning society's interests in a well-functioning SCGC, practitioners suggested enhancing observability of firms' CSP. The main argument for this is that only if the results of SCGC audits are available to stakeholders like media, NGOs, governments and so on, CSR wrongdoings can be distinctively blamed and CSR pioneers praised in terms of reputation (cp. P_6). If this is the case, competitive market mechanisms apply that cause improvement at all levels of CSP thus increasing CSP, overall. However, it was emphasized that third-party monitoring and auditing were to be employed and that a SCGC will also have to be enforced by sanctioning non-compliant behavior so that potential opportunism can be

prevented (cp. P_5). The mere plea to firms to behave responsibly has no effect since, as one of the participants (F1) pointedly stated "what does not have to be done, will not be done." In this sense, the SCGC has to be designed so that non-compliance leads to economically undesirable situations. Audits were conceived as the most important instrument to assess SCGC compliance. When asked which organization could carry out third-party audits and monitoring of processes and results, experts pledged for a professional and accredited organization with high expertise in these issues. The cooperation with an independent, accredited audit organization assures impartial assessment and evaluation of compliance with the SCGC. With their broad networks of well trained on-site employees all over the world, who are proficient in monitoring and auditing CSR issues, these organizations possess the required professional competence. Their engagement would likely also improve the credibility of the SCGC. In collaboration with a yet to be created SCGC-launching body, the audit organization is supposed to develop a sophisticated enforcement system with institutionalized monitoring and auditing mechanisms and a prescribed set of sanction rules. However, attention has to be paid that the audit organization does not get into a conflict of interest as a co-creator and executer of the enforcement system.

5.4 Additional insights: CSR necessitates a continuous and incremental learning process

When Chinese and Indian interviewees were asked about their particular cultural perspectives on CSR or different contents a SCGC could reasonably cover, they did not express substantial differences to the perspectives of practitioners in Germany. Except for an accentuation of the prevention of corruption and the notice that noise is a particularly important issue in emerging countries, contents regarding CSR appear to be the same, globally. Hence, proposition P_1 together with the specific list of principles derived from the content analyses of previous literature and extant codes were strongly supported and validated.

However, achieving high levels of CSP is even more complex than it is often expressed [cp. 80] and simple solutions are rare. What might count as "right" in one context might be "wrong" in another. This was illustrated by a CPO (G1), who had just returned from a journey to potential suppliers in Africa. He reported from situations in which children help their families doing work a few hours a day so that they and their siblings are able to afford school uniforms. If children did not have the opportunity to enter school because of missing uniforms, he argued, then Western firms that discourage child labor and contact to these people, would actually cause more harm than good. Another well-known example is that of children who

worked as football stitchers in Sialkot, a Pakistani city in which about 60 million hand-stitched footballs are produced in a World Cup year [64]. Due to the international focus on the sporting goods industry and its "Atlanta Agreement" (a ban on child labor), overnight thousands of children became unemployed. As a result, these children were forced to seek employment in brickworks and metal-working companies, where the agreement was not valid. However, compared with their former work, the children suffered under even harsher working conditions without learning any useful trade [12]. Of course, there are severe cases in which children are actually exploited which shall in no way be relativized. Nonetheless, the anecdote depicts the difficulty of viewing CSR as a manicheistic choice between good and evil, or black and white.

Asian practitioners reported that, unfortunately, many firms in their countries are still only focused on the economic dimension. While in these countries regulations and laws that target issues such as environmental protection and working conditions also exist, a significant number of firms regularly do not comply with them, according to corporate experts. For these firms, CSR is apparently only a useful buzzword that helps to sell products and services. All Asian experts agreed that at some level of development, all dimensions have to be reconciled and balanced in order to achieve sustainable growth. However, criticism with respect to these practices might be based on Western beliefs and be myopic, since, from the perspective of Asian experts, economic growth is considered to improve quality of life of poor people. A German expert (G1) conceded: "We have to beware that the German perspective cannot be the measure of all things. There are differences in mindsets, and other worldviews have their right to exist." When we asked why only a few companies today are justifiably regarded as top performers in CSR, professionals highlighted that an ambitious CSP is unlikely to be reached easily from 1 day to another. Rather, in line with the natural resource-based view [45], as well as with the stream on sustainable education [e.g., 41], the adoption of CSR procedures has to be regarded as a continuous improvement and gradual learning process that is mostly path-dependent and incorporates cultural as well as relational components [103]. Becoming ethical is, in the words of one of the corporate experts (R1), a "learning process that does start from scratch, [and there is] no patchwork process."

5.5 Additional insights: the supply chain perspective

The corporate experts pointed toward means by which the initiative ought to adopt a supply chain perspective. In this regard, an important question concerns both the sponsoring function and the addressee function of the SCGC. As the name of the envisioned standard indicates, we regard the support of the buying firm's supply chain management function (whatever the specific denomination may be) as a critical factor for success. With regard to power aspects which usually increase downstream supply chains, this appears to suggest that a sales or distribution unit would be the primary addressee of the SCGC. However, practitioners pointed out that many of the problems that we seek to prevent may occur anywhere within a supplier's organization, most importantly within their operations. Thus, buying firms are supposed to address suppliers' entire organizations and all processes carried out by them. Furthermore, corporate experts were of the opinion that buying firms were "obliged" to prevent ethical problems internally, before demanding this from their suppliers through a SCoE. Excluding the inherent normative element from this perspective, it still appears that for a supplier to actually be sensitized for the norms and values behind the SCGC (or actually any SCoE), the buying firm is able to demonstrate its internalization of these values. We conjecture that, indeed, buying firms must have a corporate code of ethics or a surrogate in place before they actually approach their suppliers with these issues. Only through responsible internal behavior might firms be seen as role models [cp. 93, 112] that have the authority and acceptance to legitimately control for SCGC compliance. Thus, the SCGC is a general code of ethics that is to be diffused holistically throughout supply chains, rather than a SCoE only. The most promising process by which the SCGC stands a chance to become a reality appears to be a major effort by firms in the developed world to actually improve CSP in their upstream supply chains. Arguing that presumably these firms will be characterized by comparatively minor internal CSR problems, their supply chain management organizations are the first functions whose support is critical for SCGC success.

Furthermore, while anticipating the adoption of the potential SCGC with interviewees and workshop participants, a seeming paradox became apparent: If the SCGC is to be diffused as a standardized SCoE, demanding that each buying firm purchases according to the same SCGC principles, then inevitably the call for a supply chain perspective leads to the situation that full global SCGC adoption and compliance with the SCGC is required right from the first adoption by any firm. For example, if firm A buys a good X from a supplier B under SCGC conditions, then the integration of a supply chain perspective requires B to also have bought all components and services necessary for X under SCGC conditions, and so forth. Because of present levels of vertical disintegration and division of labor, the mechanism would basically cause a domino effect requiring complete SCGC adoption by all firms right from the beginning. This circumstance, in turn, would presumably prevent any initial SCGC adoption. Hence, the

SCGC must take a supply chain perspective, while at the same time including a viable and sophisticated role-out mechanism.

6 Proposed SCGC design concept

In this section, we describe the proposed design concept in its entirety. It was possible to comply with all requirements.

With respect to SCGC content, the interaction with corporate experts strongly supported the picture drawn from the content analysis (cp. Table 5). In concordance with previous codes of ethics, SCGC content could primarily be expressed in form of behavior-guiding principles (rules). However, we found that the mere generation of a SCGC document that contains a set of principles does clearly not suffice to effectively govern the behavior of firms, managers, employees, and suppliers. Rather, a perspective is recommended which regards the SCGC as being entangled in an entire management system. The SCGC management system as we propose is comprised of three building blocks of components: SCGC core modules, SCGC supplements, as well as related institutions. We explain each in turn.

6.1 SCGC core modules beside guiding principles

The most important core module of the SCGC management system beside the SCGC principles is a capability maturity model (CMM). Since different firms adopt innovations at different points of time [100] and as firms differ in their actual CSP, potential adopters might greatly vary in their propensity to adopt the SCGC. However, all the advantages of the SCGC innovation become relevant only after a critical mass has adopted it, which makes the SCGC a standard. Yet, the CMM enables the provision of this critical mass such that each previous and all later adopters of the SCGC will profit from its further diffusion. In particular, the CMM provides the opportunity to address a highly heterogenous set of potential adopting firms by iteratively rising aspiration levels. The integration of a temporal perspective on SCGC diffusion [100] via a dynamic CMM enables a workaround for the prima facie dilemma of having to choose a "quality approach" or a "quantity approach" for the SCGC aspiration level (cp. Fig. 2) and synthesizes them into an "integrative approach" (cp. Fig. 3). In this case, both the high quantity of laggards (firms that are at an early stage of CSP) and the smaller number of early adopters (firms that already have a high CSP) are addressed. Each SCGC adopting firm is able to comply with an aspiration level that is adequate for its respective context so that as many potential adopters as possible can be addressed (e.g., N_1, N_2, and N_3 will be categorized according to their CSP to a certain SCGC
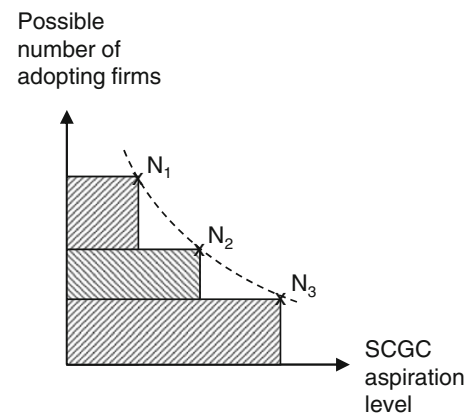
Integrative approach (CMM)

Fig. 3 Integrative approach (CMM) as solution to the quantity-quality dilemma

aspiration level) (cp. Fig. 3). Further, by making these levels observable to outsiders, firms have strong incentives to comply with the highest aspiration level possible. The CMM thus maximizes the real-world impact of the SCGC, as is graphically suggested by the shaded areas in Fig. 2a, b, as well as 3. Furthermore, through the mediating mechanism of increasing observability, the CMM triggers CSP-related competition and thus increase global CSP levels, in the long run.

By being applied to supply chains, a CMM also incorporates a multiplier effect with regard to adoption of the SCGC [cp. 4, 23, 87]. In fact, the SCGC CMM can be a creative bypass for the previously discussed issue of seemingly needing full global SCGC diffusion and compliance right from the first adoption by any firm. Further, having different aspiration levels in place fulfills the requirement of considering CSR as a learning process. At any given aspiration level, firms are hence presented with suggestions for further improvement, which are precisely the requirements that have to be fulfilled for the superordinate aspiration level. Furthermore, throughout various aspiration levels, suitable extant codes and standards can be integrated into the SCGC, which complies with an additional requirement identified from the interaction with corporate partners. Overall, a CMM appears to be at least as important to the success of the SCGC initiative (i.e., adoption and effectiveness) as the SCGC principles. Figure 4 provides an overview of a possible specific CMM to demonstrate the feasibility of using a CMM in general. It is, however, not claimed that this particular CMM design is the "best" or only conceivable one. We will now explain the CMM in detail:

The first aspiration level of the CMM can be viewed as a minimum stage which firms throughout the world can agree to with relatively little effort. For example, this could
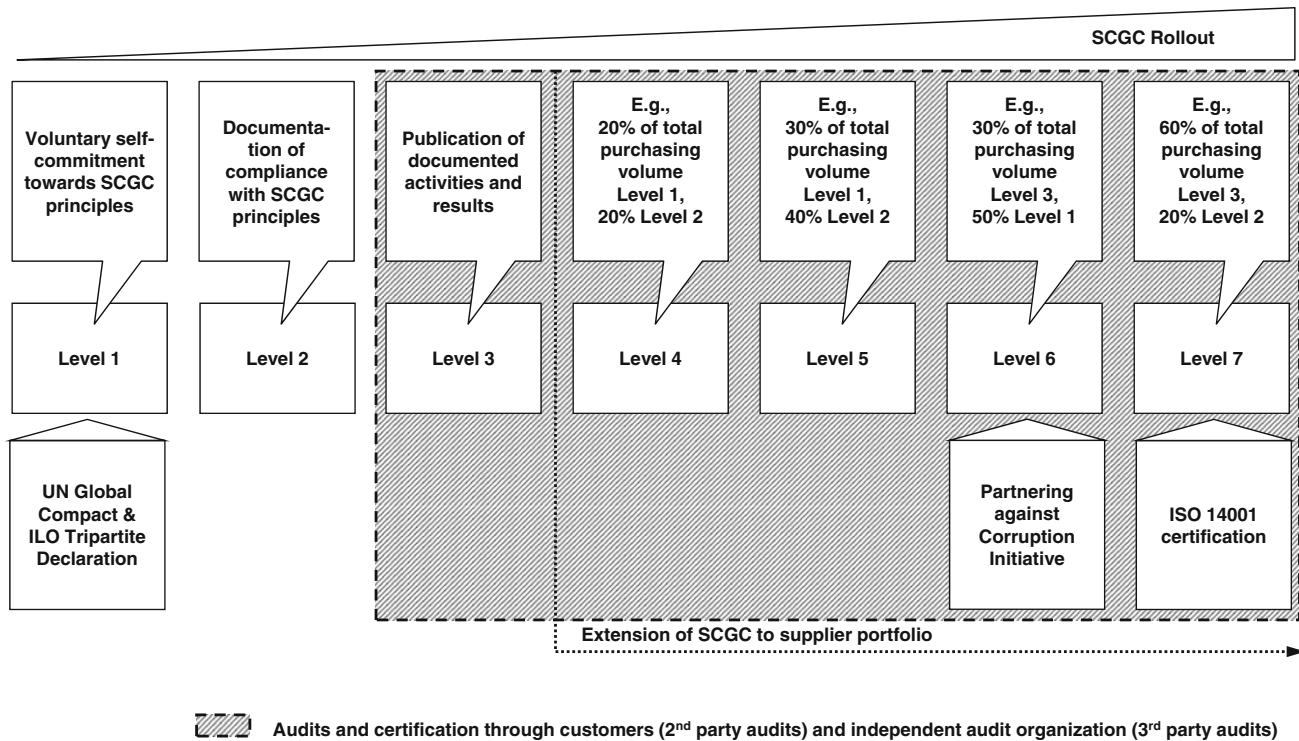
Fig. 4 Proposed capability maturity model (CMM) overview

be a voluntary self-commitment to the principles of the SCGC, which means that firms sign the SCGC and thereby declare to respect its contents. Level two could be distinguished from the former by prescribing the requirement that activities and processes implemented with regard to the SCGC principles are documented and made accessible to direct customers on request. However, it might also be based on voluntariness like the first level such that compliance is not audited or controlled in any way. This would result in a higher degree of observability for buying firms, which in turn would have the opportunity to select their suppliers according to these indicators, or at least to ask them for particular aspects of the documentation. Customer firms might thus obtain some kind of early warning instrument with regard to ethical risks by gathering risk information and building thorough knowledge with regards to these issues within their supply chains [96]. The mere documentation might already facilitate timely reactions if problems arise with suppliers. This mechanism would even be strengthened at higher levels of the CMM if firms were obliged to publish these activities and results. For example, one might think of a small document similar to CSR reports. The concept of publishing the activities and results is based on the conviction that interested stakeholders, CSR experts, and firms in general will be able to assess the CSP of firms in detail. Such a use of decentralized evaluation knowledge allows for bypassing the assessment of CSP on absolute terms and facilitates external and context-specific

assessment by experts of CSR efforts, processes, and results. For example, NGOs that are active in the respective firm's local area and corporate procurement officers who are skilled in interpreting numbers and results know best which firms fall short of being social responsible or which serve as positive benchmarks. By making performance public or at least available to a certain group of selected members (the call for disclosure has always to be balanced against firms' confidentiality interests), firms can be ranked according to their CSP. A process like that introduces market logic as stakeholders might start to blame bad performers, whereas responsible firms will start to praise their engagement and their results with regard to their competitors. Consequentially, increased competition with regard to CSR can be expected, as good values and rankings foster reputation of firms [19, 104]. Moreover, procurement managers' decision-making processes are expected to be influenced by this information if their intention is to foster ethical supply chain management. Hence, in the long run, suppliers that do not strive for CSR (which are not ranked or poorly ranked) might lose orders.

In order to bypass the problem of audit fatigue, the CMM has to offer a standardized audit mechanism. Whereas at a lower aspiration level, firms could still be entitled to second-party audits by their customers; at a higher level, only a specialized accredited organization should conduct such audits. It is important that firms that were recently audited (either second-party or third-party)

do not have to expect further unnecessary audits as long as they do not show irregularities. Otherwise, intended procedural costs savings of the SCGC initiative would not take effect. As long as no follow-up audits become necessary due to well-defined reasons, all firms adopting the SCGC are obliged to rely on extant SCGC system internal audit results. Thus, a third-party audit organization is one of the basic linchpins of the SCGC.

As a further important aspect of the CMM, we propose the incorporation of extant, renowned codes at different stages of the SCGC. In particular, two options were conceived: On the one hand, the SCGC could explicitly demand compliance with other codes and standards at certain levels. For instance, joining the UN Global Compact may be a requirement that could be fulfilled by all firms and which therefore could be demanded at a very early level of the CMM. In contrast, the environmental management system ISO 14001 entails more challenging compliance conditions and would thus have to be subjected to a higher SCGC level. On the other hand, one might think of an assessment model that values the input of divergent standards and codes with regard to certain issues and principles. According to this option, being compliant with a particular standard X could, for example, cover a certain percentage of principles Y and Z of the SCGC. Following this path, the SCGC would become a meta-code that reconciles the multiplicity of existing codes. As, together with the other SCGC components, the employment of the CMM is intended to ensure global applicability without losing specificity; the first option appears to be superior and is proposed here. The opportunity of including other more specific codes as well as industry-specific add-ons grants high degrees of specificity for different CSR aspects.

As the last and main feature of the CMM, we propose to actively involve suppliers in the roll-out of the SCGC, thereby using the multiplier effect of supply chains to diffuse the SCGC. From a certain level on, the SCGC extends compliance with its principles from a single firm focus to the respective supplier relationships of a firm. For instance, at a given maturity level (e.g., level 4), a customer firm that has signed the SCGC is required to buy at least 20 % of its total purchase volume from suppliers which have to be on at least Level 2 of the SCGC. Through this feature, we abet that buying firms use their market power in order to support the SCGC. Consequentially, the mechanism establishes self-enforcing SCGC adoption, also resulting in increasing social responsibility in supply chains. If it was done differently and supplier compliance with the SCGC was demanded from the lowest level onwards, then because of present levels of vertical disintegration and division of labor, the mechanism would basically require complete SCGC adoption by all firms,

right from the start. However, this would presumably prevent any initial SCGC adoption.

Overall, the CMM offers the following features that foster the diffusion of the SCGC: First, the CMM enables observability of SCGC contents and processes and of CSP results of SCGC adopting firms through publication obligations and rankings. This high observability is supposed to be appreciated by stakeholders and should thus increase the image of the initiative. As a side effect, firms have the opportunity to better assess potential business partners, which diminishes CSR-related risks in turn. Second, the CMM enables relative advantages for SCGC adopters in terms of reputational benefits and decreased procedural costs. Third, as the CMM allows for optional inclusion of additional well-known initiatives, (industry-) specific codes, and standards at different aspiration levels, the global applicability and compatibility of the SCGC will increase substantially. Fourth, by offering different aspiration levels, the CMM conceives CSR as a learning process and offers as many potential adopters the opportunity to join. Lastly, the incorporation of buying firms' suppliers from certain aspiration levels on fosters the supply chain perspective of the SCGC and also enhances the critical mass of adopters, while at the same time, the dilemma of full synchronal SCGC adoption by all firms is avoided.

Beside the principles and the CMM, another SCGC core module is proposed here, namely a preamble. The preamble serves as a value-oriented counterpart to the rather compliance-oriented principles [cp. 128]. By appealing to a common spirit and by referring to shared values, the preamble is supposed to create a common identity for adopters of the initiative. Furthermore, by leaving room for normative demands, the preamble allows the SCGC to be more than a minimum standard only. By positively stating the very values the SCGC stands for, the preamble serves as a counterpart to negatively formulated principles, which only contain what has to be prevented and thus might be threatening [63]. Demanding values beyond those rules of compliance might increase the image of the SCGC among stakeholders. Figure 4 depicts the CMM and graphically summarizes the above-stated findings.

6.2 SCGC institutions

The SCGC core modules are supported by related institutions. Those are a so-called SCGC board, one or more audit organization(s), and ideally an influential International Organization as a sponsor.

The SCGC board is supposed to serve as the SCGC-launching institution, to oversee the future development of the initiative and to become a platform on which code adopters have the opportunity to exchange information and perspectives regarding the SCGC. The SCGC board

furthermore institutionalizes communication and provides coordination of trainings among all stakeholders and even legislatory bodies and thereby increases awareness for SCGC topics. By providing these channels of exchange, the board ensures trialability and simplicity of the SCGC as problems and developments can be discussed and tested. Thus, the SCGC board is supposed to be the first institution to be founded in order to create the SCGC core modules, together with relevant stakeholders such as possible adopting firms, supporting organizations, and interested NGOs. A collaboration platform provided by the SCGC board helps not only to coordinate participation of all involved actors, but also builds trust among all involved parties and thus enhances the legitimacy, i.e., image of the initiative, in accordance with our DOI-guided analysis. Furthermore, in order not to lose its compatibility and image, the SCGC will have to be continuously refined as new legislations and international developments in the sphere of CSR will most likely emerge. This is particularly important with respect to P_1 as what is undisputed with regard to CSR contents depending on contexts and thus might change over time.

Audit organizations are another type of SCGC institutions. Employment of accredited and independent audit organizations guarantees an effective enforcement of the SCGC and adds high contextual (i.e., industry-specific, regional, and cultural) expertise in the field of social auditing. Thus, the audit organization ensures the full coverage of contents, their specificity, and timeliness, as well as global applicability. Without this, the SCGC would lose almost all factors relevant for a successful diffusion according to DOI.

Furthermore, it is advisable to seek out a renowned International Organization. Its only function is to act as a patron for the SCGC initiative and to support it in reaching a critical mass of initial participants by increasing the image of the initiative. According to DOI, the greater the reputation of that organization is, the better the image of the whole SCGC initiative will be and thus the higher the rate of adoption.

6.3 SCGC supplements

Last, the SCGC requires certain supplements which result partially from the other two components. Specifically, audit guidelines and sanction rules will be necessary if the code is to be effectively enforced. Clearly formulated audit guidelines and sanction rules that are applied to all adopters strengthen the enforcement of the SCGC. Their standardization decreases the need for enforcement processes and procedural costs associated with these; it hence creates relative advantages. Furthermore, if these rules and guidelines are observable for stakeholders and perceived as effective, they are expected to improve the image of the SCGC. However, these supplements have to be designed in coordination with the accredited third-party audit organization and other stakeholders through the SCGC board in order to preserve compatibility and simplicity.

As a means for contextualization, we also propose the development of an implementation handbook with guiding positive and negative examples for each principle. Together with the (abstract) principles, the incorporation of an audit organization and the CMM, the implementation handbook is supposed to ensure global applicability. The handbook might help firms to better understand the abstract principles and to learn to apply them in different cultures and contexts. Examples of how to react in ethical dilemmas foster the development of ethical
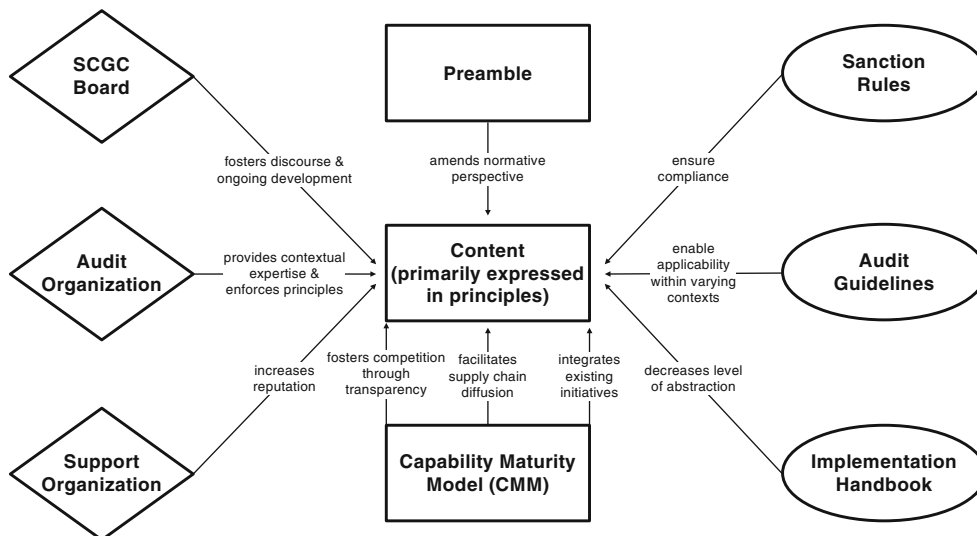

Fig. 5 Proposed SCGC design solution overview

intuitions [63] and thereby increase the trialability and simplicity of the SCGC. Being aware of the threat industry specifications pose to an intended global standard, these are regarded as an optional amendment to the design concept which could be further investigated in future works.

The ultimate Fig. 5 depicts the proposed SCGC design concept in its entirety.

Table 6 gives a concluding overview over the requirements which we derived from theory (DOI and code-related literature) and those which were extracted within the discussions and interviews with corporate experts and links these with the proposed SCGC design concept. The design concept fulfills all of these requirements.

7 Conclusion

Reconciling profit maximization and social responsibility is one of the most challenging tasks today for firms. To date, a product's lifecycle and its environmental and social footprints are influenced by many different firms. Thus, effective governance toward substantially higher CSP levels increasingly has to transcend the corporate sphere of control and integrate ethical supply chain management. In our study, we show how a standardized supplier code of ethics, which we refer to as SCGC, might be beneficial to firms and CSR-interested parties, alike. Most importantly, it can be expected to improve CSP throughout supply chains. Our main contribution in this paper consists of a

Table 6 Linkage of SCGC requirements and proposed design concept

Requirement	Origin	Implementation
Content coverage, specificity, and incorporation of other initiatives	Theory (DOI and Literature) and corporate experts	(Abstract) principles as presented in the review cover all relevant topics
		Audit organization contextualizes abstract principles
		SCGC board and audit organization ensure completeness and actuality in the long run
		CMM enables optional inclusion of additional well-known initiatives, (industry-) specific codes and standards at different aspiration levels
Inclusion and coordination of stakeholders	Theory (DOI and Literature)	Consideration of stakeholders' views in the development process of the design concept
		SCGC board allows for inclusion and coordination of stakeholders in developing and advancing the SCGC
Communication and trainings	Theory (DOI and Literature)	SCGC board enables communication, coordination and institutionalization of trainings with regard to the SCGC
		Implementation handbook helps to contextualize principles
Global applicability	Theory (DOI and Literature)	Integration of experts' pristine views in Germany, China and India during the development process of the design concept
		(Abstract) principles together with implementation handbook, incorporation of audit organization, and CMM ensure global applicability
		CMM enables optional inclusion of more (industry-)specific codes
Enforcement system with standardized procedures	Theory (DOI and Literature) and corporate experts	Audit organization and SCGC board together with stakeholders develop a sophisticated standardized enforcement system
		Clear audit guidelines and sanction rules that are formulated and applied to all adopters strengthen the enforcement
Observability	Theory (DOI and Literature)	CMM enables observability of the contents, processes, and results of the SCGC
		Adopters are obliged to publish their CSP according to the SCGC
		Publication of the design concept in *Logistics Research*
Internal and external support	Corporate experts	Well-respected support organization helps to convince managers to adopt the SCGC
		CMM fosters reputational benefits, decreases procedural costs and diminishes CSR-related risks
Rules versus values orientation	Corporate experts	Preamble serves as a value-oriented counterpart to the rather compliance-oriented principles
		Preamble leaves room for normative demands, that allow the SCGC to be more than a minimum standard
		Preamble refers to shared values and is supposed to create a common identity of adopters of the SCGC

Table 6 continued

Requirement	Origin	Implementation
Learning process	Corporate experts	CMM offers different aspiration levels that consider CSR as a learning process and reflect different levels of CSP
		SCGC board enables communication, coordination and institutionalization of trainings with regard to the SCGC
		SCGC board is able to adjust the content to future CSR-related developments
		Implementation handbook helps to contextualize principles
Supply chain perspective	Corporate experts	CMM incorporates buying firms' suppliers from certain aspiration levels on
		CMM avoids the dilemma of full synchronal SCGC adoption by all firms

proposal of a design concept for the SCGC. The design concept is developed out of a two-phase research process that integrates content analysis and design science. It provides clear answers to the research questions posed at the outset: (1) The content that reasonably could be covered by the SCGC is a synthesis of those CSR topics that are established in the literature and extant codes. Content should primarily be expressed in behavior-guiding principles. However, given the relative consensus on appropriate code content, content is likely—and somewhat surprisingly—not what determines SCGC success, i.e., adoption and effectiveness. Success is rather ensured through the SCGC management system which is to be built around the SCGC core modules. (2) The most important mechanism for diffusing the SCGC into business practice is a CMM. As it offers the opportunity to include many adopters located in the range between early adopters and laggards, it helps to overcome the initial quantity–quality dilemma of potential adopters. Furthermore, it fosters CSP competition among firms through observability. Through the rankings of the CMM, firms' CSP will be comparable, and poorly ranked firms are expected to strive for CSP improvements. The danger of constantly being blamed by stakeholders and competitors due to low ranking conveys a threat of reputational damages and being sanctioned by customers [19]. Moreover, by integrating suppliers at its higher levels, the CMM comprises a mechanism for using CSP differentials to the benefit of socially irresponsible firms and, especially, countries. Thus, the CMM also complies with the concept of CSR as a continuous learning process. (3) The SCGC can become an effective standard if and only if it (a) provides clearly visible relative advantage, such as reputational benefits, to firms so that the top management is committed to adopt the SCGC or if (b) firms are pushed by their customer firms (or other stakeholders) to adopt the SCGC, to maintain or even increase their share of wallet with those customers. SCGC effectiveness is further fostered through the specificity of the content, through the enforcement system, and through communications and trainings. These factors are also fostered and facilitated by the SCGC management system.

An important barrier to the SCGC design that merits special attention in this conclusion is context specificity. National culture, level of socio-economic development, industry, and firm size were identified as hampering factors to the aspired context-independent applicability of the SCGC. Having conceived multiple unsatisfactory alternatives, we propose context dependence of performance evaluation as a creative response to context dependence of performance aspiration levels. Thus, the SCGC management system is designed in such a manner that it takes highly decentralized and context-specific knowledge of context experts and auditors into account. This feature is built into the CMM and also triggers the formulation of rather abstract principles, the incorporation of a value-oriented preamble, and the creation of an inspiring implementation handbook.

In terms of methodology, the employed multi-method approach, in particular the design science phase was found to have been highly useful to achieve our research objectives. We suggest that not only logistics research and business ethics research, but also other research in the fields of business and management employs design science more often. Given that the corporate and social reality is still frequently characterized by a lack of CSR and CSP, design science as a change-facilitating methodology could be taken advantage of, more systematically.

However, it is conceded that design science also entails a limitation in that the results of this research are more strongly impacted by individuals involved in the research process than is usually the case. To limit the extent of this influence, we tried to avoid systematic cultural bias by involving experts from Germany, China, as well as India. In total, 34 managers with different functional backgrounds from 20 internationally operating firms provided their perspectives and acted as critical counterparts throughout this project. Further, within the financial and temporal constraints of a project-based research initiative, we could not actively collaborate with all of the possibly relevant actors, at the same time. As we anticipate firms to be the most important category of actors for this voluntary initiative, we concentrated on cooperating with them, in a first

step, while we sought to at least consider the interests and positions of all other actors. As a result, we propose this first SCGC design concept to the scientific community, as well as to all interested actors who might still be integrated in the yet ongoing development process. In fact, for a future SCGC to be actually derived from rigorous scientific processes, it appears to be necessary that the community is actively involved in the further development, at this point.

Numerous important research steps could still be amended. Concerning the content side of a SCGC, the actual set of principles has to be written out in full. Linked to this task, it has to be evaluated if industry-specific add-on modules are indispensable or if workarounds for the abstraction-specificity problem suffice already. Furthermore, the inclusion of other initiatives and codes must be detailed and managed. In any case, potential codes and standards have to be assessed with regard to their requirements, contents, intended goals, and effectiveness. Last but not least, it is necessary to convince appropriate audit and sponsor institutions of the project. In collaboration with all SCGC actors, audit guidelines and sanction rules are to be developed.

Overall, we expect the SCGC to contribute to higher global levels of CSP. Although there are still many aspects to be determined, this research marks a major first step toward a standardized supplier code of ethics.

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