The influence of ethical culture on supplier selection in the context of sustainable sourcing

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ABSTRACT

Driven by the upsurge in global (out-)sourcing and the changing expectations of organizations' stakeholders, companies are increasingly being held responsible for the actions of their suppliers. Subsequently, Purchasing and Supply Management (PSM) has emerged as an important factor in safeguarding organizations from being accused of irresponsible behavior. Grounded on the concept of ethical culture, the research in this paper identifies elements for guiding PSM behavior towards socially and environmentally sustainable supplier selection. Results indicate that different elements of the firms' ethical culture have a significant impact on how purchasing managers account for social and environmental criteria when selecting suppliers.

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1. Introduction

The importance of aligning corporate activities and decisions with the ethical expectations of the companies' internal and external stakeholders in order to maintain legitimacy and ensure economic sustainability has been acknowledged by various researchers and practitioners (Kleindorfer et al., 2005). In this context, the Purchasing and Supply Management (PSM) function has emerged as an important factor in safeguarding organizations from being accused of unethical behavior and subsequent reputational damage (Carter and Jennings, 2004; Handfield et al., 2002). This development has mainly been driven by the upsurge in global (out-)sourcing and the changing expectations of organizations' stakeholders, including customers, the general public, and even NGOs, who now hold companies responsible not only for their own actions, but also for the actions of their partners within the entire supply chain (Jiang, 2009; Koplin et al., 2007; Kovacs, 2008). However, recent studies have demonstrated that managers in general and purchasing managers in particular are uncertain about how to manage ethical behavior in their organizations to live up to the increasing expectations of their stakeholders (Maignan et al., 2002). Taking this into account, it can be stated that the apparently existing external pressures for more ethical behavior does not remain unheard but turning these external requirements into proper internal decision-making is still an issue among corporate managers that remains unsolved. Discussions on designing ethics programs rather as compliance or values focused are neither unambiguous nor conclusive as sufficient empirical studies are lacking (Collier and Esteban, 2007). Based on the concept of ethical culture, the research presented in this paper identifies elements that influence ethical behavior in purchasing organizations. Thereby, ethical behavior relates to the three dimensions (i.e., social, environmental, and economic) of the triple bottom line (TBL) leading to a trade-off purchasing managers are often confronted with. In our research we focus on supplier selection—a particularly important area of strategic decision-making when it comes to sustainability and ethical behavior: while not only the perception of what constitutes ethical behavior has evolved over time, also the scope and locus of actions for which companies are held responsible has changed. Today, ethical responsibility extends beyond the corporate boundaries. The so-called focal companies are expected to ensure that partners in their supply chain act accordingly (Blowfield, 2000; Koplin et al., 2007). Being at the foremost frontier to suppliers and other upstream members of the supply chain, PSM plays a decisive role in ensuring that suppliers comply with ethical standards (Carter, 2000). Consequently, various systematic approaches toward ensuring suppliers’ compliant behavior with the focal company’s ethical standards have emerged. Yet, recent
examples, such as Mattel, where China-sourced toys contained extraordinary high levels of lead (Eckert, 2007), show that even comprehensive systems put in place to ensure ethically sound behavior can be bypassed, commemorating that, at the end of the day, individual employees are the ultimate decision makers (Perron et al., 2006). Hence, companies are challenged to encourage ethical behavior as effectively as possible if they want to succeed in achieving sustainability.

This task is particularly delicate for PSM, since it leads to a dilemma for purchasing managers (Harwood and Humby, 2008): they are expected to purchase at the lowest possible price, but also to ensure sustainability beyond the focal company’s borders, requiring socially, ecologically, and economically sound decisions. However, this balance is easily tipped-off, impairing all of the aforementioned dimensions of the triple-bottom line and, thus, may as well have a negative impact on the economic dimension (e.g. due to higher purchasing prices). Without proper knowledge of the suppliers’ production environment and with product specifications being equal, the purchasing manager may exhibit the propensity to select the supplier with the lowest price from a group of potential suppliers (Jiang, 2009; Noci, 1997). However, the supplier offering the lowest price might only be able to do so because of lower standards with respect to environmental protection or labor conditions (Arnold and Hartman, 2005; van Tulder and Mol, 2002). Existing literature suggests that in practice ecological and environmental criteria are oftentimes dominated by economic criteria (Berger et al., 2007, p. 139): “There is nothing altruistic about [CSR initiatives]. If we have two projects, one with a 20% ROI and a second with a 10%, even if the second is socially more responsible, [this company] will do the 20% ROI project.” Therefore, a purchasing manager faces the trade-off between achieving the lowest price and selecting suppliers that respect environmental and social standards. According to the notion of sustainability, the purchasing manager’s choice could be considered ‘partially correct’ if he chooses the supplier offering the lowest price—assuming that lower purchasing costs contribute to the economic sustainability of the focal company. However, this comes at the risk of disclosure and reputational damage and it may not be considered socially or environmentally sustainable. This potential conflict is augmented by the fact that purchasing managers often have performance-based compensation schemes that are solely based on cost savings, or lack proper resources to assess and ensure suppliers’ compliance with ethical standards (Harwood and Humby, 2008; Maigian et al., 2002). Weaver et al. (1999, p. 44) describe this dilemma in more general terms stating that “commitment to ethics can easily be lost in an environment in which managers are expected to deliver increasing returns to shareholders”. To distinguish the influence of social and environmental criteria from pure economic criteria in supplier selection, we introduce the term sustainable supplier selection. Sustainable supplier selection characterizes the extent to which purchasing managers take into account social and environmental criteria when selecting new suppliers. As an example, sustainable supplier selection may include that a purchasing manager puts particular emphasis on selecting suppliers that demonstrate compliance with widely accepted labor standards.

Previous research suggests that the presence of an appropriate ethical culture determines, to a large extent, how employees evaluate the potential trade-off between social/environmental sustainability and economic considerations (Cooper et al., 2000; Gonzalez-Padron et al., 2008). Ethical culture is, on the one hand, composed of tangible elements such as the establishment of a code of conduct (CoC) as well as incentives (i.e., rewards and punishment) (Weaver et al., 1999). On the other hand it includes intangible elements such as peer behavior (e.g., management examples) and obedience to authority (Treviño et al., 1999). Considering the previously outlined trade-off between social/ environmental and economic criteria the question arises if, from the point of view of purchasing managers, elements of ethical culture also enhance socially and environmentally sustainable decision-making when selecting new suppliers. The following research question motivates and guides our analysis: How does the ethical culture of an organization as perceived by purchasing managers influence sustainable supplier selection? In more detail we are interested in the question of which elements related to ethical culture influence socially and environmentally sustainable supplier selection and how strongly individual elements impact the decisions made by purchasing managers.

To address these research questions we conducted a survey-based analysis among 71 purchasing managers from multinational companies located in Germany. Based on an extensive literature review, we identify and operationalize relevant constructs that reflect the aforementioned dimensions of ethical culture and develop a set of hypotheses on the relationships between these dimensions and sustainable supplier selection. We employ structural equation modeling techniques to test our hypotheses. The remainder of this paper is organized as follows: in the following section, we review the relevant literature on supplier selection in the context of sustainability as well as ethical culture, and highlight our contribution. Thereupon, we develop the hypotheses that predict the relationship between these elements and the sustainable sourcing activities of companies. In Section 5 we present our results. Finally, we discuss our results, highlight managerial implications, and outline limitations as well as future research opportunities.

2. Literature review

The research presented in this paper relates to two streams of research: research on supplier selection and the impact of ethical culture on organizations’ social and environmental sustainability. In the following, we provide a brief review of both areas and identify the research gap that motivates our research.

2.1. Supplier selection in the context of sustainability

Supplier selection is a key activity of PSM (Schiele, 2007), and one of the most important in order to build a sustainable supply base. By selecting only suppliers, which meet certain predefined criteria, purchasing takes on a role as a gatekeeper. While purchasing managers can select from a range of traditional supplier evaluation and selection criteria, e.g., price, quality, and delivery time, oriented towards economic sustainability of a company, there is little consensus regarding those attributes that are critical for ensuring environmental and especially social sustainability (Blowfield, 2000). This is especially interesting against the background that the aforementioned traditional performance criteria can be assessed at the point of delivery, while those criteria related to environmental and social sustainability can only be assessed at the point of value creation (i.e., at suppliers’ locations). Consider, for example, an insurance company buying soccer balls for marketing purposes. While quality, price, time of delivery, etc. can be assessed upon material receipt, the balls do not reveal, whether they were sewed by children or adults, or under which conditions they were produced. Apparently, the supplier’s production processes and facilities require special attention in order to reduce the focal company’s risk to become associated with unsustainable behavior. However, purchasing managers themselves are not able to evaluate whether items purchased from distant sources were produced under conditions that are in line with their social and environmental standards, at least not on a day-to-day
basis. Therefore, they may require evidence from third parties, e.g., independent agencies that perform unannounced on-site visits (Van Tulder and van der Zwart, 2006).

To provide guidance for employees, institutions have started to adopt and develop sustainability standards. A well-established standard (Gilbert and Rasche, 2007) is the UN Global Compact (UNGC), the world’s largest corporate responsibility initiative with over 8000 business and non-business participants in more than 140 countries (Hall and Cruse, 2011). The UNGC distinguishes between four different (non-economic) dimensions of sustainability: human rights, labor, environment, and anti-corruption. While the environmental dimension of the UNGC is directly related to the environmental dimension of the TBL, the labor dimension can be attributed to the social dimension of the TBL. When taking the UNGC into consideration in supplier selection, the clearly defined principles of each dimension can be transferred to the PSM context: purchasing managers should, for example, not buy from suppliers who (1) fail to protect labor standards (e.g., by employing children, applying forced and compulsory labor, or by discrimination) nor who (2) harm the environment (e.g., by disregarding the environmental protection). We build our definition and operationalization of sustainable supplier selection (as defined previously) on these criteria of the UNGC. We also distinguish between socially sustainable supplier selection (based on labor standards of the UNGC) and environmentally sustainable supplier selection (based on environmental standards of the UNGC).

Most prior contributions in the field of sustainable supplier selection have focused on incorporating environmental aspects. According to Green et al. (1996), a rigorous environmental supplier evaluation fosters a better distinction and choice of compliant suppliers. Relevant evaluation criteria, such as green competence, environmental efficiency, green image, and life cycle cost, are important for establishing an environmental performance and compliance measurement (Noci, 1997). In the same vein, Humphreys and Chan (2003) present a green supplier selection approach, applying both quantitative and qualitative criteria.

Distinctively fewer works focus on the social dimension in the field of sustainable supplier selection, for example, under the umbrella of ‘ethical sourcing’ (Blowfield, 2000; Roberts, 2003), ‘socially responsible buying’ (SRB) (Maignan et al., 2002) or ‘purchasing social responsibility’ (Carter, 2005; Carter and Jennings, 2004; Hutchins and Sutherland, 2008). Maignan et al. (2002) define SRB as the “inclusion in purchasing decisions of the social issues advocated by organizational stakeholders”. Hutchins and Sutherland (2008) suggest a range of indicators, which could be considered as a proxy of measures steering towards SRB, e.g., labor equity, health-care, safety, and philanthropy at supplier’s plants. Similarly, Carter and Jennings (2002) include ‘diversity’, ‘human rights’, ‘philanthropy’, and ‘safety’ in their construct ‘socially responsible buying’.

Recently, the simultaneous consideration of environmental and social issues in PSM has received increasing attention, highlighting the synergies available from such integration (Carter and Rogers, 2008; Matos and Hall, 2007; Pagell and Wu, 2009). Maignan et al. (2002) combined green and social supplier selection criteria in their discussion on how to integrate non-economic criteria into the purchasing process. Based on multiple case studies across best-practice companies, Pagell and Wu (2009, p. 51) find that alignment of the business model with social and environmental elements is a decisive factor for establishing an orientation towards sustainability in employees’ “day to day conversation”. Harwood and Humby (2008, p. 167) even perceive “something of a vacuum in research activity which addresses [...] social, environmental and ethical factors [...], which must be dealt with in supply decision-making”.

From this brief overview, we observe that (1) existing research predominantly focuses on selective dimensions of sustainable supplier selection and rarely examines the social and environmental dimension of sustainability at the same time; (2) prior contributions did not explore, which factors and mechanisms influence whether or not purchasing managers incorporate social and environmental criteria into supplier selection decisions. As highlighted previously, we build on the concept of ethical culture to identify such factors and to assess their impact. In the following section, we therefore review the relevant literature that has discussed ethical culture in other areas of business, unrelated to PSM, in the next section.

2.2. Ethical culture

The perception of what constitutes ethical behavior in the business environment has experienced a profound change over time (McWilliams et al., 2006; Melnyk et al., 2003; Welford, 1995). While sole compliance with legal regulations was the primary concern of professional ethical behavior for a long time (Rudelius and Buchholz, 1979a; Walley and Whitehead, 1994), today’s understanding of ethical business practices goes well beyond mere legal compliance and is being shaped by expectations of numerous stakeholders (Maignan et al., 2002). In the extant literature a variety of terms and definitions related to the broader context of ethical, responsible, and sustainable business practices can be found (Ingenbleek et al., 2007; Welford, 1995) without being either mutually exclusive or commonly agreed on.

In this paper we follow the notion of Svensson et al. (2009) who clearly relate ethics and sustainability to each other. They state “that one cannot have truly sustainable business practices without being focused upon being ethical.” Accordingly, ethical behavior and sustainability are “intertwined and inseparable [because] if one adopts an ethical stance then one should naturally be doing business in a sustainable way” (Svensson et al., 2009, p. 2). This perspective corresponds to the interpretation of numerous authors ( Elkington, 1998; Kleindorfer et al., 2005) and has been extended to the notion of the ‘triple bottom line’ of organizations. Accordingly, Kunsch et al. (2009) conclude that the ethical problems decision makers face “appear in conflicts between economic, societal, and environmental aspects” reflecting the three dimensions of the TBL.

In this context “ethical” is used in combination with behaviors and activities which do not necessarily exist in written form and go beyond laws and regulations. Fray (2007) follows that notion and concludes that ethics “answers the question dealing with “how should I do”, or better still: “how should I live within and by my company”.

Ethical culture is a major component of organizational culture (Treviño, 1990) and as such is viewed as “both the medium and outcome of social interaction” (Denison, 1996, p. 635). Accordingly, it has been identified as a determinant of ethical behavior and as such “helps to establish what is considered legitimate or unacceptable in an organization” (Treviño et al., 1998, p. 452). Following the phenomenal research stream that primarily focuses on “observable behaviors and artifacts” (Kopelman et al., 1990), Treviño et al. (1998) identify three ethical context factors in their empirical study that constitute ethical culture: (1) ethical environment, which encompasses both the behavior of top management, i.e., how much they care about ethics and serve as examples for their employees, and incentives, i.e., punishment of unethical behavior and rewards for ethical behavior; (2) obedience to authority, reflecting to which extent employees are expected to “do what they are told” by their superiors, and (3) code implementation, which refers to the establishment of a code of conduct (CoC) in an organization, i.e., whether the CoC is widely distributed in the organization and if employees are required to read the CoC and assert regularly that they act accordingly. The study of Treviño et al. (1998) has become a
cornerstone in the discussion of the impact of corporate ethics e.g. on various corporate performance aspects (e.g., Chun et al., 2011; Orlitzky et al., 2003; Waddock and Graves, 1997), which motivates the adherence to that approach in this study.

Prior research has investigated the influence of ethical culture on behavior and decision-making of employees. Treviño and Weaver (2001) investigated the influence of ethical culture on unethical conduct in situations not governed by formal control systems. Their findings suggest that ethical culture can influence ethical conduct as well as the attitude of individuals in organizations (e.g., Key, 1999; O'Reilly III and Chatman, 1996; Treviño et al., 1998). Treviño et al. (1998, p. 469) investigated in detail the influence of the previously defined elements of ethical culture on ethical conduct and find that “ethical environment and obedience to authority were the best overall predictors of unethical conduct”. Weaver et al. (1999) concentrate on ethical decision-making and state that the implementation of a code of conduct influences the same.

From this literature review, we observe that PSM plays a major role in safeguarding focal companies from the negative consequences associated with unethical behavior. Yet, it remains uncertain, how ethical decision making in PSM can actually be fostered. Furthermore, research on ethical culture has primarily concentrated on (1) the identification of factors that form ethical culture and (2) the influence of ethical culture on behavior, attitudes, and ethical conduct of individuals in general terms. It has, however, not examined how ethical culture impacts actual decision-making of PSM members; little is known about how corporations can better turn sustainability requirements into actions to protect the organization from the consequences of unethical sourcing decisions. Hence, we intend to investigate whether the ethical culture of a company, as perceived by purchasing managers, affects their decision-making and translates into socially and environmentally sustainable decision-making in supplier selection.

3. Theoretical background and hypothesis development

To guide purchasing managers when facing the previously outlined trade-off in supplier selection between economic criteria on the one side, and social and environmental criteria on the other side, the focal company may rely on different elements to enhance ethical conduct and decision-making. Treviño et al. (1999, p. 452) propose that to “the extent that […] cultural systems support ethical conduct, individual behavior is expected to be more ethical”. We build up on the concept of ethical culture as defined by Treviño et al. (1998) and investigate the influence of ethical culture on socially and environmentally sustainable supplier selection. More specifically, we concentrate on the influence of the elements (1) top management examples, (2) incentives, (3) the implementation of a code of conduct, and (4) obedience to authority as perceived by purchasing managers. We will elaborate on each of these elements in the following sections. Fig. 1 depicts the research model that constitutes the basis of our analysis. The individual constructs as well as the hypotheses regarding their relationships will be explained in the subsequent sections.

3.1. Ethical behavior of top management

Top management plays an important role in order to establish an ethical culture through visible action (Treviño, 1990). Weaver et al. (2005) identify interpersonal behaviors (e.g., care, concern, and compassion), fairness with others, ethical action, and expectations for one-self (e.g., high standards for oneself, self-sacrifice), and articulating ethical standards as the key characteristics of managers’ ethical behavior. Adam and Rachman-Moore (2004), for example, find that examples set by managers influence ethical employee behavior. Similarly, Treviño et al. (1999, p. 141) find that in organizations in which employees perceive that “executives regularly pay attention to ethics, take ethics seriously, and care about ethics and values as much as the bottom line, all of the outcomes were significantly more positive”. Hence, if purchasing managers perceive that top management behaves more ethical, they are expected to behave accordingly. Following the previous line of reasoning that ethical behavior leads to more sustainable decision-making we can assume that purchasing managers’ perception of top management behavior has an impact on how social and environmental sustainability criteria are incorporated into the supplier selection process. Therefore, we hypothesize the following:

**H1a.** The level of socially sustainable supplier selection is positively related to the ethical behavior of top management.
H3b. The level of environmentally sustainable supplier selection is positively related to the ethical behavior of top management.

3.2. Incentives

Literature distinguishes between two types of incentives relevant for our context: while rewards incentivize employees to act in a certain manner, punishments intend to avoid certain actions (Treviño et al., 1999). Treviño et al. (2000) point out that rewards are not only to be understood in a monetary sense, but may, for example, also be forgiveness if someone made a mistake but was honest. Within this context, Hegarty and Sims Jr. (1978) find in their research that rewards have a significant influence on ethical conduct in organizations. Similarly, Treviño and Youngblood (1990) show that rewards have an indirect influence through outcome expectancy on ethical decision-making behavior. Treviño (1992, p. 649) defines punishment “as the manager’s application of a negative consequence or the withdrawal of a positive consequence from someone under his or her supervision”. Arvey et al. (1984) found that punishment is necessary in addition to rewards in order to achieve a desired behavior. Butterfield et al. (1996, p. 1506) are more specific and state that “managers see punishment incidents as a highly charged cognitive and emotional events with far-ranging implications for a variety of outcomes”.

Accordingly, both, rewards and punishment, are viewed as powerful instruments to signal, which behavior is expected from the individual employee (Treviño et al., 2000). We argue that this strong effect of incentives on ethical decision-making can also be observed in the PSM domain. If a company provides incentives for its employees to behave ethically, this should also impact on how purchasing managers take decisions and, in particular, evaluate the trade-off between social, environmental, and economic criteria when selecting new suppliers. Consequently, we propose the following hypotheses:

H2a. The level of socially sustainable supplier selection is positively related to the degree to which incentives for ethical behavior are established.

H2b. The level of environmentally sustainable supplier selection is positively related to the degree to which incentives for ethical behavior are established.

3.3. Implementation of code of conduct

A code of conduct (CoC) defines the ethical standards in organizations and provides guidelines on how employees should behave under different circumstances (e.g., Kaptein, 2004; Preuss, 2010). The implementation of a CoC, i.e., the extent of its distribution, acknowledgment, and understanding, reduces unethical conduct in organizations (e.g., McCabe and Treviño, 1993; Paine, 1994). More specifically, Valentine and Fleischman (2008) identify the presence and implementation of a CoC as key drivers for ethical behavior. Although a CoC is usually established for the entire organization rather than individual domains, we can expect that it will influence purchasing managers’ ethical behavior. Purchasing managers facing the trade-off between social/environmental criteria and economic criteria may receive guidance on how to evaluate this trade-off by specific rules and regulations established in the CoC. This leads to the proposition of the following hypotheses:

H3a. The level of socially sustainable supplier selection is positively related to the implementation of a code of conduct.

H3b. The level of environmentally sustainable supplier selection is positively related to the implementation of a code of conduct.

3.4. Obedience to authority

Obedience to authority has been found to cause reluctance to report problems and foster unethical conduct of employees (Weaver, 2004). Milgram (1974) conducted a large experiment on how people react when being obliged to act strictly as they are told without considering their own values and conscience. He found that people obey to authority to such an extent that they would accept harming other people although this might be in conflict with their personal values. In accordance with these findings, Treviño et al. (1999) state that obedience to authority is what mostly harms the ethical culture of a company. Similar findings were obtained in the study of Treviño et al. (1998) in which the authors found that obedience to authority significantly influences observed unethical behavior. Relating these results to PSM, we can conjecture that purchasing managers that work in an environment with high emphasis on obedience to authority are more likely to take unethical decisions (i.e., choosing always the supplier that offers the best price without considering social and environmental sustainability criteria) (Harwood and Humby, 2008). According to the proposed link between ethical and sustainable decision-making we can conclude that obedience to authority will also negatively influence the consideration of social and environmental criteria in supplier selection. Therefore, we propose the following hypotheses:

H4a. The level of socially sustainable supplier selection is negatively related to the level of obedience to authority.

H4b. The level of environmentally sustainable supplier selection is negatively related to the level of obedience to authority.

4. Research methodology

4.1. Sample and data collection

The empirical study consisted of a questionnaire to gather information on ethical culture as well as socially and environmentally sustainable supplier selection in companies. We used a third-party web-hosted survey tool to collect answers. To initially address participants, we sent an e-mail to 286 purchasing managers that had previously participated in different purchasing – not sustainability – trainings and courses. A total of 71 purchasing managers participated in our study, leading to a response rate of 25%. The participating companies operated in a wide variety of sectors, such as automotive and machinery (31%), health care and chemicals (19.7%) transportation and public utilities (14.1%), services (14.1%), fashion (7%), food and beverages (7%), and others. Approximately 13% of the companies had a turnover of less than €50 million, 18% had a turnover less than €500 million, 10% had a turnover less than €1 billion, 34% had a turnover less than €10 billion, and 25% achieved a turnover of more than €10 billion. On average, these purchasing professionals had been involved with corporate social responsibility for five years. To enhance data quality, we scheduled telephone interviews with the participants to guide them through the questionnaire. We developed a manual on how the phone call was to be conducted and trained the research team beforehand to assure that no bias would occur due to differences in support. Since all interviews were accompanied, missing data did not cause significant issues.

4.2. Construct measurement

Whenever possible, we used existing scales to measure the constructs of interest. We employed seven-point Likert-type scales anchored by “strongly disagree” and “strongly agree”. Table 1 contains the wording for the measurement models.
Socially and environmentally sustainable supplier selection were measured with four and three items, respectively. These items were derived from the UNGC. For all the other constructs, we used indicators developed by Treviño et al. (1998).

4.3. Assessment of bias

Social desirability bias occurs when respondents wish to position themselves in a favorable way with respect to social norms (Bennett and Blamey, 2001; Mitchell and Carson, 1989). To avoid social desirability bias, all statements were verbalized with regard to purchasing professionals in the organization in general, rather than concentrating on the individual purchasing manager; a similar technique was applied by Rudelius and Buchholz (1979). According to Armacost et al. (1991) this is more effective than other methods such as randomized response technique or individual-based scenarios.

We tested for key informant bias as proposed by Cannon and Perreault (1999) and asked respondents how confident they felt about answering the questionnaire, how strongly they are involved with their suppliers, and how knowledgeable they are about their suppliers. A mean of the responses of 4.80, 5.23, and 5.37 indicated that respondents were confident about answering the questionnaire and were able to depict sustainable supplier selection accurately.

Finally, following Armstrong and Overton (1977) we assessed non-response bias by comparing the answers of early respondents (first one-third of respondents who answered the survey) with late respondents (last one third) to items that were used in the analysis. The t-test of group means showed no significant differences and therefore, we concluded that non-response bias is not an issue in our analysis.

5. Results

To test our hypotheses, we employed the Partial Least Squares (PLS) approach (Chin, 1998) using SmartPLS 2.0 (Ringle et al., 2005). The PLS approach was selected because (1) the objective of our research is to predict the endogenous variable (Chin and Newsted, 1999), and (2) PLS allows for a robust estimation of a structural equation model when sample sizes are relatively small. Heuristically, PLS analysis requires a sample size at least ten times larger than the largest number of exogenous constructs that load on an endogenous construct (Chin and Newsted, 1999); accordingly, our sample size of 71 is powerful enough. Furthermore, we conducted a more restrictive post-hoc power analysis as recommended by Brock (2003). The obtained power level ($\pi = 0.94$; $\alpha = 0.05$) exceeds the recommended value of 0.80, also indicating strong statistical power (Cohen, 1988; McQuitty, 2004).

### 5.1 Measurement model

The results of the measurement model are reported in Table 1. Factor loadings, t-values, Cronbach’s alpha (CA), composite reliability (CR), and average variance extracted (AVE) all point to a high level of reliability and convergent validity of the measurements. Discriminant validity was established with the Fornell–Larcker criterion.
(Fornell and Larcker, 1981). For each construct, the AVE is much larger than the squared correlation between each construct and the other constructs in the model (see Table 2).

Since one key informant provided answers for all constructs in our analysis, we accounted for common method bias by first conducting Harman's single-factor test. By doing so, we included all of the indicators used in our model in an exploratory factor analysis (Podsakoff et al., 2003). The examination of the unrotated factor solution revealed seven factors with 39.0% being the most variance explained by one factor. Furthermore, we applied the approach proposed by Lindell and Whitney (2001) using a marker variable to detect common method bias. We used the item “How often did you travel abroad last year (private trips)” as a marker variable which, from a theoretical point of view, is not related to the constructs in our study. We adjusted the zero-order correlations among the constructs in our study by partialling out this marker variable. As a result of this adjustment, the significance of the resulting coefficients did not change. In summary, we conclude that common method bias is not a problem in our analysis (Podsakoff and Organ, 1986).

We also tested for multicollinearity among the constructs influencing sustainable purchasing. We used the factor scores of the latent constructs calculated by SmartPLS 2.0 for purposes of calculating the variance inflation factors (VIFs). The highest VIF was 2.09 and, therefore, far below the critical threshold of 10 to make it an issue for concern (Hair et al., 1998).

### 5.2. Structural model

The standardized path coefficients and associated t-values generated by the bootstrapping function of SmartPLS 2.0 (1500 re-samples with a sample size of 71) are depicted in Table 3. To estimate the predictive capability of the model, we applied a blindfolding approach (Fornell and Bookstein, 1982). The $Q^2$-value of 0.27 for socially sustainable supplier selection and 0.29 for environmentally sustainable supplier selection differ significantly from zero, indicating predictive power of the model for these variables (Geisser, 1974; Stone, 1974). With an $R^2$—value of 0.37 for socially sustainable supplier selection and 0.36 for environmentally sustainable supplier selection, the explanatory power of the model is very satisfactory.

The results in Table 3 indicate a significant relationship between the ethical behavior of top management and socially as well as environmentally sustainable supplier selection. Therefore, $H_{1a}$ and $H_{1b}$ are supported. Similarly, the implementation of a code of conduct has a significant influence on environmentally sustainable supplier selection, confirming $H_{3b}$. However, we did not find any significant relationship between the implementation of a code of conduct and socially sustainable supplier selection, leading to the rejection of $H_{3a}$. Additionally, we could also not confirm a significant relationship between incentives and socially as well as environmentally sustainable supplier selection, leading to the rejection of $H_{2a}$ and $H_{2b}$. With respect to obedience to authority, we found a significant negative relationship with the construct of socially sustainable supplier selection, confirming $H_{4a}$. However, we could not confirm the same for environmentally sustainable supplier selection, leading to the rejection of $H_{4b}$.

6. Discussion of results and managerial implications

This study extends prior literature by investigating the impact of ethical culture on a specific organizational unit, i.e., PSM. Thereby, it concentrates on decision-making of purchasing managers with respect to socially and environmentally sustainable supplier selection.

In the following discussion, we will elaborate on our findings, commencing with the behavior of top management, and followed by the other aforementioned elements of ethical culture.

### Table 2

Discriminant validity assessment.

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<td>Obedience to authority</td>
<td>0.10</td>
<td>0.01</td>
<td>0.02</td>
<td>0.00</td>
<td>0.00</td>
<td>0.67</td>
</tr>
</tbody>
</table>

Numbers on the diagonal show the AVE; numbers below the diagonal represent the squared correlation between the constructs.

### Table 3

PLS results: structural model.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Standardized path coefficient</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_{1a}$: ethical behavior of top management → socially sustainable supplier selection</td>
<td>0.37</td>
<td>2.61**</td>
</tr>
<tr>
<td>$H_{1b}$: ethical behavior of top management → environmentally sustainable supplier selection</td>
<td>0.28</td>
<td>2.18*</td>
</tr>
<tr>
<td>$H_{2a}$: incentives → socially sustainable supplier selection</td>
<td>0.04</td>
<td>0.28**</td>
</tr>
<tr>
<td>$H_{2b}$: incentives → environmentally sustainable supplier selection</td>
<td>0.04</td>
<td>0.27**</td>
</tr>
<tr>
<td>$H_{3a}$: implementation of CoC → socially sustainable supplier selection</td>
<td>0.19</td>
<td>1.40**</td>
</tr>
<tr>
<td>$H_{3b}$: implementation of CoC → environmentally sustainable supplier selection</td>
<td>0.39</td>
<td>3.08***</td>
</tr>
<tr>
<td>$H_{4a}$: level of obedience to authority → socially sustainable supplier selection</td>
<td>−0.26</td>
<td>−2.68***</td>
</tr>
<tr>
<td>$H_{4b}$: level of obedience to authority → environmentally sustainable supplier selection</td>
<td>−0.06</td>
<td>−0.53**</td>
</tr>
</tbody>
</table>

Variance explained

<table>
<thead>
<tr>
<th></th>
<th>$R^2$</th>
<th>$Q^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socially sustainable supplier selection</td>
<td>0.37</td>
<td>0.27</td>
</tr>
<tr>
<td>Environmentally sustainable supplier selection</td>
<td>0.36</td>
<td>0.29</td>
</tr>
</tbody>
</table>

n.s.: not significant.

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$. 
Overall, our findings have to be considered in light of the unique development of PSM and the cultural context in which this study was conducted. PSM has evolved from a clerical function, including mostly operational tasks, into a more strategic function (Handfield et al., 2002; Schiele, 2007). However, purchasing managers' performance is still predominantly assessed according to traditional, rather short-term oriented, 'value for money' (VFM) criteria, which include price, cost, and quality of the purchased products. Thus, management still lacks proper measurement that go beyond these basic savings objectives (Harwood and Humby, 2008; Pagell and Wu, 2009). This limited scope is also reflected in the supplier selection processes, where sustainability criteria can seldom be found as decision variables “alongside the classical VFM variables” (Harwood and Humby, 2008, p. 170). Hence, incorporating social and environmental criteria into the supplier selection process requires purchasing managers to adapt their long-established set of objectives. Against this background, our study implicitly explores whether certain elements of ethical culture can induce purchasing managers to shift their focus from short-term criteria to (rather intangible) environmental and social sustainability criteria with a longer-term orientation.

Our findings suggest that higher or lower levels of top management's ethical behavior as perceived by an organization's purchasing managers do translate into the specific actions reflecting socially and environmentally sustainable supplier selection, as suggested by hypotheses H1a and H1b. This is in line with prior research, e.g., on ethical decision-making in marketing (Ferrell et al., 1989), and social learning theory (Stead et al., 1990). For example, Stead et al. (1990, p. 234) explicitly propose that “the ethical behavior of managers will certainly influence the ethical behavior of employees”. Our results indicate that in the purchasing domain top management’s ethical behavior also provides sufficient motivation to shift from the traditional VFM criteria to more long-term oriented, sustainability criteria in the specific context of supplier selection. This finding supports the observations made by Maignan et al. (2002) that purchasing managers are overstrained and (without clear directions) uncertain how to incorporate sustainability into PSM practices, and thus need guidance by top management. We observe that this holds true both for criteria related to social sustainability and criteria related to environmental sustainability.

In contrast to the impact of top management behavior on environmentally and socially sustainable supplier selection, our analysis only revealed a strong and significant positive relationship between the implementation of a code of conduct (CoC) and environmentally sustainable supplier selection. A CoC typically establishes clear rules and guidelines on what is considered ethical and unethical. Our findings imply that purchasing organizations can translate the general guidelines and rules established in the CoC into specific environmental criteria and related actions to be applied in supplier selection. Thus, the CoC may be considered as a vehicle for introducing additional environmental sustainability criteria into the supplier selection process. In this regard, the environmental guidelines established by the CoC may serve as a justification for purchasing managers not to strictly and dogmatically follow short-term objectives and requirements of their internal customers, but to also incorporate longer-term environmental sustainability criteria into their decision-making process.

Still, the non-significant influence of a CoC on socially sustainable supplier selection (in contrast to the significant influence on environmentally sustainable supplier selection) is surprising because it is reasonable to believe that a CoC also provides guidance with respect to social issues. One possible explanation for the sole significant influence of a CoC on environmentally sustainable supplier selection may be that environmental initiatives have been developed for a longer time period, and thus have been more thoroughly integrated into a CoC. Furthermore, environmental initiatives are generally more tangible, and thus can be easier implemented into a CoC and translated into specific action (see Blowfield, 2000 for a similar argument). Preuss (2010, p. 475) supports this argument: he found in his study that 75 of the constituent firms of the FTSE100 index “have adopted environmental policies or sustainability policies, which often include environmental standards for suppliers” in addition to their CoC in order to address concrete issues such as reduction of energy consumption and increase in resource efficiency. Finally, environmental guidelines may be more developed in existing CoCs because companies have realized that associated measures may also lead to economic benefits (Carter et al., 2000; Montabon et al., 2000). The outlined arguments raise the question of how to best design a CoC so that both social and environmental behavior are included. We will address this concern when discussing the managerial implications of our research.

Contrary to our reasoning in Section 3, we did not find a significant impact of incentives (i.e., rewards and punishment) on sustainable supplier selection. In our discussion we will elaborate on each of these two components that constitute incentives. On the one hand, rewards may contribute to the non-significant influence of incentives on sustainable supplier selection due to the fact that compliance with certain ethical standards is seen as a minimum requirement every purchasing manager has to fulfill; meeting these expectations prevents purchasing managers from being punished, but it does not warrant additional rewards. Another explanation can be seen in the difficulties associated with designing appropriate reward systems for ethical conduct (Treviso, 1990). James (2000, p. 45) argues that ethics-focused reward systems will be “ineffective at fully promoting ethical behavior”, unless the behavior of employees is continuously monitored and employees are empowered to make an ethical decision when they experience pressure to behave unethically. This reasoning is closely related to the claim made by Stead et al. (1990, p. 236); “if ethical behavior is desired, the performance measurement, appraisal and reward systems must be modified to account for ethical behavior”. Furthermore, rewards currently employed may not be sufficient to counterbalance traditional VFM criteria (e.g., incentives for achieving savings) because traditional criteria are well established and/or companies lack to continuously monitor of whether or not employees meet management's expectation in terms of ethical behavior.

On the other hand, punishment may also contribute to the non-significant influence of incentives on sustainable supplier selection as well. We suggest the following explanation: when punishment is installed, it lacks comprehensible information on cause and effects. Without clear guidance in a situation of ambiguity, i.e., in the absence of guidelines, the decision-maker cannot gauge the consequences of a particular action. Thus, in a situation in which purchasing managers are uncertain whether the selection of a particular supplier meets the expectations in terms of social and environmental sustainability, they will opt to choose the supplier with the best price regardless of sustainability considerations; the prevailing, traditional performance measures will certainly make this choice more appealing. An alternative explanation stems from the particular national context of our study: in Germany, contracts, employee rights, and union agreements make it difficult for companies to enforce punishment. Knowing that, purchasing managers might be tempted to take the chance and aim for higher immediate financial gains before considering the less likely and less harmful forms of punishment—especially if being incentivized based on VFM criteria.

Based on this brief discussion, it becomes evident that, at least in our particular context, one has to be careful when drawing
general conclusions regarding the effectiveness of incentives to promote socially and environmentally sustainable supplier selection. Our explanation of these results could be that all companies in our sample provide equally low levels of incentive mechanisms with little variation across purchasing managers' perception and/or companies. However, comparing the construct scores and the standard deviation with other constructs suggest that this is not the case. We observe differences across companies/respondents' perceptions buy they simply do not explain our dependent variables (socially sustainable supplier selection, environmentally sustainable supplier selection). Therefore, we argue that due to the difficulties and problems that arise when trying to incentivize ethical behavior in general and purchasing managers' in particular, rewards and punishment may simply not be advanced enough to make a significant impact. In their recent study, Pagell and Wu (2009, p. 51) support this reasoning; they found that at numerous companies "extrinsic linkages between sustainability goals and employee outcomes were needed but generally absent”.

In contrast to the non-significant impact of incentives, we found that obedience to authority has a significant negative influence on socially sustainable decision-making. This implies that purchasing managers who perceive that they have to strictly follow their superior's instructions will put less emphasis on the consideration of social sustainability criteria when selecting new suppliers. This result is especially remarkable against the background that previous studies only examined the impact of obedience to authority on general behavior in a hypothetical experimental context (Milgram, 1963) or the influence on ethical behavior without specifying a particular organizational context (Treviño et al., 1998). However, none of the studies considered a specific organizational unit (i.e., PSM) and the context of socially sustainable decision-making. We find that obedience to authority also has a significant effect in the PSM domain.

Literature provides different explanations for why employees may disregard their own values and conscience in order to obey to their supervisors. A first explanation is given by the proximity between the acting person and the person that may suffer damage due to the unethical decision-making of the first one (Milgram, 1974). This explanation can be transferred to a PSM context: when sourcing, e.g., from emerging markets, a purchasing manager is generally not in direct contact with a supplier, and thus is not confronted with possible unethical working conditions at the supplier’s plant. Therefore, when faced by high pressure of superiors (e.g., to achieve certain VFM criteria), a purchasing manager may have fewer incentives to consider these working conditions in his decision-making. Another explanation is provided by the theory of conformism, which proposes that people who think that they do not dispose of some of the relevant knowledge to take a decision will rely on their colleagues and superiors. Thereby, experiments revealed that the larger the group of people is which supports an opinion, the more likely a person will adopt that opinion as well (Asch, 1955). In a PSM context, purchasing managers may not have a lot of experience with social sustainability, and, therefore, may rely on their supervisors’ decisions. This may also explain why we did not find a significant relationship between obedience to authority and environmentally sustainable supplier selection. Purchasing managers may have better information about the ecological performance of their suppliers and it may be easier to account for measures related to, for example, the reduction of CO₂ emissions. Finally, Milgram (1974, p. xii) argues that "the essence of obedience consists in the fact that a person comes to view himself as the instrument for carrying out another person's wishes, and he therefore no longer regards himself as responsible for actions".

In a purchasing organization with a strong focus on obedience to authority, purchasing managers may be more likely to only fulfill the instructions of a supervisor to select a new supplier at the lowest cost without questioning, for example, labor standards at the supplier’s plant.

Based on the discussion of our key findings, we can derive managerial implications that are relevant both to senior purchasing managers and the top management of companies, who intend to extend sustainability considerations to their purchasing organizations. As outlined in our introduction, this should be of major concern for top management, especially because of the high risks associated with non-sustainable behavior of purchasing managers and their role as "gatekeepers" in the company. Although we did not analyze a time sequential effect, we believe that it is reasonable to assume that intangible effects such as ethical behavior of top management and a low level of obedience to authority are a prerequisite for tangible measures like a CoC to come into effect. Therefore, we propose that, as a first step, management itself has to behave ethical and serve as a good example of ethical conduct to their employees. Without an adequate ethical mindset and behavior the enhancement of sustainable supplier selection will be distinctly more difficult to achieve. This is especially important because "in many cases, managers chose to do, go along with, or ignore the unethical, not because they don't understand, but […] because they do not believe that there is anything they can do to be effective in stopping or turning around unethical behavior" (Nielsens, 1988, p. 730). As a second step, we propose that managers have to assure that their organization is not characterized by obedience to authority but fosters the individual responsibility of each purchasing manager. Therefore, the organization has to "emphasize each individual's accountability and responsibility for his or her own actions and an obligation to question authority when something seems wrong" (Treviño et al., 1999, p. 143–44). Finally, the implementation of a well-defined and formalized code of conduct is of high relevance. James (2000, p. 43) supports this argument concluding that these “company policies reflect efforts to appeal to the worker's sense of right and wrong”, and thus address the individual employees and ultimate decision-makers. Although the CoC cannot be all-embracing and requires constant adaption to reflect the changing ethical expectations of internal and external stakeholders, as well as PSM's broadening field of activity, it has to clearly state what is considered ethical and which consequences employees have to expect if they behave unethically. Farrell and Farrell (1998, p. 587) extend the previous line of reasoning stating that codes "rarely contain operational definitions to direct their addressees on situations of moral hazard and the required response". This seems to apply especially to socially sustainable supplier selection as perceived by purchasing managers since our results did not reveal a significant influence of a CoC. However, a positive relationship may still be established, if the CoC is well defined with respect to social sustainability (i.e., including concrete measures) and employees obtain an understanding of which potential damage they may not only impose on their supplier's workers but also on their own company. Additionally, companies may enhance their CoC with respect to socially and environmentally sustainable supplier selection by driving special attention to PSM. For this, they may develop a policy for the purchasing department that forms an integral part of the CoC and addresses key issues relevant for purchasing managers when selecting new suppliers (e.g., Preuss, 2010).

Summarizing our results, we observe that the mentioned steps form an important part of the model of ethical behavior in organizations proposed by Stead et al. (1990), who state that "norms not supported by appropriate behaviors are not likely to
be accepted as legitimate by employees”. Furthermore, they clarify that “a meaningful code of ethics cannot rely on blind obedience. It must be accepted and internalized by the employees who are required to implement it” (Stead et al., 1990, p. 239).

Thus, it is reasonable to conclude that through appropriate managerial behavior, ethical and, therefore, also sustainable decision-making can be implemented.

7. Limitations and future research

Previous works suggest that the results of studies dealing ethical decision-making will differ depending on various factors, such as the cultural context (e.g., Cooper et al.; Goffin et al. 2006; Shafer et al. 2007), time or competitive environment (McGoldrick and Freestone, 2008). This study was conducted among purchasing managers of companies based in Germany during one of the worst financial and economic downturns in decades. Considering that empirical research in this particular cultural and environmental context has seldom been carried out thus far, these circumstances might be regarded as a particularity rather than a limitation. Therefore, replication of this study is recommended in different cultural contexts and in a more stable economic environment.

A second limitation lies in the sample on which our analysis is based. Due to the relatively small sample size, generalizability is a critical issue of our study. It provides first initial findings on the effect of elements of ethical culture on sustainable supplier selection which should be tested and explored based on a larger sample population. Further studies should also consider additional variables such as industry, company size as well as individual characteristics of purchasing managers that may have explanatory power with respect to certain effects. As Treviño et al. (2008) determined that perceptions of ethics differ significantly across different organizational levels, further research could examine whether purchasing professionals at different organizational levels differ in their perception of sustainable sourcing.

Third, the quantitative approach of our study might also be considered as a limitation. Crane (1999, p. 240) highlights the potential shortcoming of a quantitative approaches in the field of business ethics since it is “still attempting to progress out of the exploratory stage of theory development”. Consequently, he argues in favor of more qualitative, e.g., case study, research in order to circumvent potential misunderstandings caused by the still ill-defined measures, such as social responsibility and ethical values. We perceive this argument as a motivation for further qualitative research in order to, for example, assess how organizations actually incorporate the various elements of ethical culture in their PSM function and, which best practices can be identified in solving purchasing managers’ ethical dilemmas.

Finally, considering that a CoC emerged as an important measure for ensuring sustainable supplier selection, a more detailed study of how effective CoCs should be designed – especially in the context of PSM – seems very promising.

References


