

ANTECEDENTS OF GREEN SUPPLIER CHAMPIONING AND GREENWASHING: AN EMPIRICAL STUDY ON LEADERSHIP AND ETHICAL INCENTIVES

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Abstract:

Buying firms are increasingly confronted with compliance scandals in their upstream supply chain, for which they are held accountable by their stakeholders. Purely symbolic practices, typically referred to as greenwashing, as well as substantive practices, such as green supplier championing, are thus receiving widespread attention in business practices and academia alike. In this study, we reveal the impact of two opposing leadership dimensions following the concepts of ethical and transactional leadership as antecedents for green supplier championing and greenwashing. We particularly address whether these antecedents have a complementary or a counterproductive effect on green supplier championing and greenwashing. Furthermore, we investigate the complementary impact of incentives and the two leadership styles on achieving sustainability behavior. The resulting model is tested using a path analysis based on a data set of 118 firms located in Germany. We find support for the positive impact of ethical leadership on green supplier championing but also a non-significant negative impact on greenwashing. Greenwashing is significantly impacted by leadership styles reflecting obedience to authority, and further moderated by ethical incentives. Interestingly, ethical incentives do not moderate the impact of ethical leadership on green supplier championing. Finally, we discuss implications for theory and business practice.

Keywords: Ethical leadership, Greenwashing; Green championing; Path analysis; Substantive actions; Supplier management; Sustainability; Symbolic actions; Transactional leadership

1. Introduction

Non-compliance with ethical and sustainability standards is still a common problem in global supply chains, although it has the potential to damage the reputation of focal firms, which in turn can negatively affect the economic performance of these firms (Reuter et al., 2010). Poignant examples include the 2010 oil spill at BP's "Deepwater Horizon" on the Gulf Coast. During that accident, 3 million barrels of oil spewed into the Gulf and caused massive destruction of plant and wildlife habitats and in turn negatively affected many people living in surrounding coastal areas (Borney, 2016). Overall, this ecological catastrophe incurred BP a charge of more than 60 billion USD for restoration, penalties, and recovery of damages (Borney, 2016). Therefore, to counteract such potentially devastating occurrences, firms often develop and implement

measures like codes of conduct and sustainability guidelines for own sourcing personnel as well as suppliers (Kaptein, 2004; Schleper and Busse, 2013).

Unfortunately, these initiatives have often been criticized as being ineffective and rather as being a form of *window-dressing* and *greenwashing* (Jiang, 2009a) that serves only as symbolic measure (McDonnell and King, 2013; Okhmatovskiy and David, 2012). Hitherto, greenwashing has mainly been defined as misleading consumers regarding the green (often in a broader sense sustainable) performance of a firm or the environmental (sustainable) benefits of a certain practice, product, or service (Delmas and Burbano, 2011; Laufer, 2003; Lyon and Montgomery, 2015; Parguel et al., 2011). According to the renowned advertising agency Ogilvy and Mather, greenwashing practices have significantly increased in the last decades and take on “epidemic proportions” nowadays (Hsu, 2011). Some scholars suppose the increased regulative and normative pressure for green accounting and transparency to be an important driver of these developments (Bromley and Powell, 2012).

Only recently, the world biggest car manufacturer Volkswagen serves as one of the most intrusive and telling examples of greenwashing (Preston, 2015). When Volkswagen was caught systematically cheating in emission tests in the US and Europe in 2015, the president of Clean Air Watch commented: “Volkswagen made a point in selling these cars that they’re clean. It’s too bad that their technology wasn’t as good as their ads” (Plungis, 2015). And at the same time Volkswagen claimed to work in an environmentally friendly fashion as illustrative statements in their 2014 sustainability report pretend (e.g., “We intend to put our creative powers to good use for the benefit of people and the environment” (Volkswagen, 2015, p. 14)).

To consequently prevent sustainability concerns in upstream supply chains, firms must implement convincing substantial measures that actually impact supplier conduct (Marquis et al., 2016). Most buying firms strive to continuously improve the sustainability performance within their supply base through proactive supplier management (Blome et al., 2014; Paulraj et al., 2014; Schoenherr et al., 2014). Consequently, many firms have begun to focus on sourcing from so called green or sustainable champions, which play a crucial role in disseminating sustainability practices in the upstream supply chain, as focal firms do not have direct access and control over the suppliers of their direct suppliers (Gallear et al., 2015; Wilhelm et al., 2016). Green supplier championing should thus be considered as a substantial means to proactively manage the upstream supply base and to disseminate green and responsible business practices

further upstream in the supply chain (Roth et al., 2008). However, though we find evidence of environmental championing and best practices in the field of supplier management, there is still a lack of empirical literature assessing the actual antecedents and drivers of green supplier championing.

Most importantly, green supplier championing and greenwashing might even co-exist and be triggered by the very same antecedents (e.g., incentives). For instance, besides its at that point latent cheating, Volkswagen was named best in class in 2015 by the prestigious Dow Jones Sustainability Indices (Hepler, 2015). Another prominent example is Walmart. On the one hand, Walmart claims to be a leader in sustainability practices (e.g., responsible sourcing practices, sourcing audits), and on the other hand, Walmart was awarded the “Greenwasher of the year 2014” title by Green Life given its extensive carbon footprint of the sourcing and distribution network. Thus, we investigate the co-existence of substantive (i.e., supplier championing) and symbolic practices (i.e., greenwashing) simultaneously in this study.

Scholarly knowledge about firm-level antecedents of these substantive and symbolic practices in sustainable supply chain management is still at an early stage, particularly when considering potential interaction of antecedents. As decisions on green supplier championing and greenwashing are ethical choices we turn our attention to antecedents that are most important to affecting ethical choices, the organizational culture (e.g., Huhtala et al., 2013; Treviño et al., 1999). In situations in which employees face ethically dilemmas, particularly two dimensions of organizational culture have been shown to have the strongest effects on ethical decision making in organizations: the leadership style and the incentive schemes (e.g., Chen, 2010; Delmas and Burbano, 2011; Ims et al., 2014; Kulshreshta, 2005; Treviño and Brown, 2004; Tullberg, 2009; Weaver et al., 1999a). In her numerous studies (e.g., Treviño et al., 1998; Treviño et al., 1999; Treviño et al., 2003) Treviño finds support for the proposition that “most people need to be led when it comes to ethics” (Treviño and Brown, 2004, p. 71). Ethical leadership is hence an important antecedent for ethical behavior in organizations (see Brown and Treviño, 2006 for an overview), although the effect of leadership styles on the implementation of CSR and sustainability in organizations calls for further research (Eisenbeiss, 2012; Waldmann and Siegel, 2008). However, besides ethical leadership, formalized organizational contexts might play an important role in ethical decision making. As many individuals focus on extrinsic motivational factors in guiding their behavior, we assume incentives to be a moderator in our study. Treviño

and Brown (2004, p. 79) even suggest that “the reward system may be the single most important way to deliver a message about what behaviors are expected”. This is in line with prior research that also found a positive relationship between falsely adjusted organizational incentive schemes and unethical behavior (e.g., Carson, 2003; Chen, 2010; Harris and Bromiley, 2007, Ims et al., 2014).

Also, from a practitioners’ perspective, leadership and incentives constitute factors which the top management of firms can influence, thus allowing firms to effectively alter their practices instantly. Hence, this focus might help managers to understand how to transcend a mere compliance focus within their sustainable supplier management practices towards more proactive measures. Although the case is not yet cleared up due to lacking informants and further information sources, many experts suppose Volkswagen’s corporate leadership and incentive schemes to be likely reasons for the scandal (Armour, 2016). So far, studies investigating leadership styles and incentives in the sustainable supply chain area are limited to notable exceptions. Goebel et al. (2012) investigated the extent to which firm-level antecedents – such as incentives, codes of conduct, ethical leadership, and expected obedience to authority – drive the implementation of sustainable and social-supplier selection practices.

By setting up a path analytic model we aim to answer the following research questions: 1. How do leadership styles (obedience to authority and ethical leadership) and incentives impact green supplier championing and greenwashing? 2. How do leadership styles and incentives interact in the pursuit of green supplier championing and greenwashing? In answering these questions we particularly contribute to the field by identifying how green supplier championing can be promoted without a simultaneous incentivizing of greenwashing activities. Furthermore, our results highlight complementarity and counterproductive effects in obedience to authority and ethical leadership styles that managers should be aware of when promoting sustainable orientation in supplier management practices.

The remainder of this article is structured as follows: In the subsequent section, hypotheses are developed and the overall framework is introduced. The third section describes the data collection and data analysis process. We then present the results of the measurement model and hypotheses tests regarding the path analytical model, followed by the discussion of theoretical and practical interpretations of our findings. The article concludes with a summary of the key findings, limitations, and suggestions for future research.

2. Literature background and hypothesis development

2.1 Leadership styles

Hambrick and Mason (1984) propose that organizations are a reflection of their leaders. Previous literature suggests that strategic choices of employees and organizational outcomes are partially predicted by managerial characteristics and leadership styles (Brown et al., 2005; Brown and Mitchell, 2010; Fehr et al., 2015). The values of top executives are particularly important from two perspectives: On the one hand, such personnel have the necessary status to influence individual and organizational actions, and on the other hand, many employees are actively orienting themselves in ethical dilemmas to their leaders (Brown et al., 2005; Finkelstein et al., 1996). With respect to leadership, we ground our investigation in two dimensions of leadership: ethical leadership and obedience to authority, which both have been embraced in several important studies on ethical culture (e.g., Godoz-Díez et al., 2011; Treviño et al., 1999). Furthermore, these aspects reflect the most widely investigated theories of leadership, namely, transactional (obedience to authority) and transformational (ethical) leadership.

The main difference between transformational and transactional leadership is manifested in terms of what leaders and followers offer to one another (Conger and Kanungo, 1998). *Transformational leaders* offer a purpose that transcends short-term goals and focuses on higher order intrinsic needs. They “communicate a collective vision and inspire followers to look beyond their self-interests for the good of the group” (Turner et al., 2002, p. 305). According to Bass and Steidlmeier (1999), transformational leaders are highly ethical, focused on values and act as sustainability role models, thereby demonstrating to their subordinates how they would like them to act on their behalf. Hence, these leaders are characterized by interpersonal behavior, fairness, and high expectations of one’s self (Treviño et al., 1999). *Transactional leaders*, in contrast, focus on exchanging resources in an adequate manner. Adequate in this sense means, that there is reciprocity between autonomous agents involved such that each might benefit through the exchange process (Burns, 1978; Simola et al., 2012). To achieve this purpose, transactional leaders focus mainly on measures with which they control and influence their followers. However, both leadership styles have advantages and disadvantages regarding sustainability implementation in the upstream supply chain. By addressing how these opposing

styles empower symbolic and substantive measures in supplier management, we help practitioners to better understand the intricacies of these leadership styles' enabling roles.

2.2 Greenwashing and supplier championing

In cases in which there is commitment but no implementation of green (sustainable) practices or deviation from it (i.e., selective disclosure), one should speak of greenwashing (Kim and Lyon, 2014; Marquis et al., 2016; Ramus and Montiel, 2005). From a general perspective, greenwashing is an important phenomenon as it is said to lead to numerous negative effects, such as (1) the reduced credibility of sustainable mechanisms and initiatives (Hsu, 2011; Pedersen and Neergard, 2006), (2) the increased likelihood of detection of non-compliance by nongovernmental organizations or consumers (Delmas and Burbano, 2011), and (3) the loss of confidence of consumers, investors, non-governmental organizations, and/or employees of the firm (Jahdi and Acikdilli, 2009; Lyon and Montgomery, 2015; Painter-Morland, 2006; Walker and Wan, 2011). Greenwashing is particularly important in supply chain management due to the large impact of suppliers on the focal firm's eco- and ethical footprint (Sarkis et al., 2011), yet it there is still need for more accurate empirical evidence on the drivers and deterrents of greenwashing in this context (Lyon and Montgomery, 2015; Marquis et al., 2016).

In its essence, the practice of championing uses direct suppliers as multipliers in addressing the previously mentioned challenges. Due to the Original Equipment Manufacturer's (OEM) structural distance to 2nd and 3rd tier suppliers which results in information deficits for the OEM buying firm (Sharfman et al., 2009), in times of globalized supply chain networks and higher stages of complexity, the importance of championing is increasing. For instance, BASF practices a sustainable supplier collaboration program where suppliers receive BASF development programs for free, but in turn have develop three critical suppliers as sub-suppliers to BASF on their own. In this context, it is found that firms that seek green champions as suppliers expect that these firms tend to pass on sustainability requirements to their suppliers (Gonzalez et al., 2008; Tate et al., 2011).

2.3. Hypothesis development

The proposed research model is shown in Figure 1, comprising five constructs and the relationships among them. Table I defines the five constructs. In this path analytical model we examine

the extent to which obedience to authority, ethical leadership, and ethical incentive drive either greenwashing, green supplier championing, or both. In the following discussion, we present the arguments for these hypotheses.

TAKE IN FIGURE 1

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2.3.1. Linking leadership to green supplier championing and greenwashing

Obedience to authority and ethical leadership are two seemingly different dimensions of leadership, and as such, we expect them to have opposing effects on green supplier championing and greenwashing.

Ethical leadership is defined as “the demonstration of normatively appropriate conduct through personal actions and interpersonal relationships, and the promotion of such conduct to followers through two-way communication, reinforcement, and decision-making” (Brown et al., 2005, p. 120). Prior empirical studies have shown that there is a positive link between ethical leadership and ethical culture and climate (Carlson and Perrewé, 1999; Dickson et al., 2001; Lu and Lin, 2014; Mayer et al., 2009; Schminke et al., 2005), resulting in increased whistle-blowing, follower prosocial behavior, prevention of workplace incivility, and further desirable aspects within the ethical organizational context (e.g., Brown and Mitchell, 2010; Fehr et al. 2015; Taylor and Pattie, 2014). Some researchers also suggest that employees trust the ethical norms displayed by executives more than any other formal guidelines, such as codes of conduct (Godos-Díez et al., 2011; Treviño and Brown, 2004).

In their pursuit of ethical behavior, top managers are crucial to organizations as they serve as role models for influencing ethical behavior of employees (Avolio et al., 2009; Du et al., 2013; Treviño and Youngblood, 1990, Shamir and Eilam, 2005). By living “practices, policies, and procedures that help to facilitate employee’s perceptions of the organization’s ethical climate” (Lu and Lin, 2014, p. 211), ethical behavior can become a genuine interest of employees when promoted and driven by senior management norms and appropriate behavior (Adam and Rachman-Moore, 2004). Thus, in organizations where the ethical culture is shaped by the demonstration of ethical behavior in leader actions, it can be expected that employees imitate this behavior (Finkelstein et al., 1996; Treviño, 1990; Treviño and Brown, 2004). Hence, in the

context of this study, we argue that if senior managers engage in proactive sustainable supply chain management practices (i.e., green supplier championing), their subordinate employees will follow and also pursue these practices.

Moreover, ethical leaders have high ethical values that motivate subordinates to behave in the best interest of the organization (Bass and Steidlmeier, 1999; Mayer et al., 2009), allowing employees to embrace various externally induced stakeholder demands with respect to green ethical and green supplier practices (Carter and Rogers, 2008; Vera and Crossan, 2004) as noncompliance with these standards could result in severe negative consequences (e.g., reputational damage and financial loss (Hofmann et al., 2014)). Thus, we hypothesize:

H1a: *Ethical leadership is positively related to green supplier championing.*

Opposed reasoning explains why greenwashing is less present in ethical leadership as highly committed ethical leaders will not encourage employees to implement greenwashing measures that are not in line with the genuine interests of ethical leadership (Brown et al., 2005). As greenwashing behavior in supplier management does not address sustainability issues in the upstream supply chain, it is not consistent with the values of ethical leadership and would, therefore, lead to identification problems. Thus, we hypothesize:

H1b: *Ethical leadership is negatively related to greenwashing.*

Obedience to authority has been highlighted as a valid and widely present dimension of organizational culture (Snell, 1999; Treviño et al., 2000; Werhane, 2013). It refers to an atmosphere in which decisions are based on hierarchy in the organization and where roles and expectations are clearly defined, thus suppressing the ethical values of individuals (Higgins and Gordon, 1985). The phenomenon originated with the Milgram paradigm, which states that under certain circumstances, people act without consideration of their own conscience when they are strictly told to perform a task (Milgram, 1974; Rosenhan et al., 1976). Since then, it is commonly supposed that many people might “obey authority figures even if that means harming another person” (Treviño and Brown, 2004, p. 72). For instance, in interviews with MBA executives, Badaracco and Webb (1995) find that many of them had faced ethical dilemmas in the business world and that mainly obedience to authority forced them to behave unethically due to their anxiety of losing the position or job. However, obedience is not only required when supervisors

ask subordinates to perform unethical practices, it is also reflected in the role of authority in the organization. Thus, Treviño and Weaver (2003) highlight the role of ethical culture-based aspects such as obedience to authority as an important factor in predicting unethical behavior in organizations.

If leaders in supply chain management units are not committed to sustainability, they may be inclined to circumvent the actions required to implement green supplier championing as it is a complex and time-consuming practice (Gallear et al., 2015; Wilhelm et al., 2016). Consequently, ethical followers (i.e., employees) might be inclined to signal compliance (i.e., symbolic behavior) without actually implementing proactive championing measures (i.e., substantial measures) in order to benefit from the situation as they can invest the time on other career enhancing activities then. Furthermore, in cases where leaders demand obedience to authority rather than to act as authentic ethical role models, subordinates might be inclined to greenwash to appease their managers and stakeholders in the short run without making the investment into substantial, proactive environmental practices. In this case, it is clear that followers, even though they might be personally committed to sustainability, may implement requested activities from the leader at a superficial level as a symbolic gesture of compliance as “most adults are followers, when it comes to ethics” (Treviño and Brown, 2004, p. 72). Thus, we hypothesize:

H₂: *Obedience to authority is positively related to greenwashing.*

2.3.2. The moderating effect of incentives

From the literature review, we ascertain that there is some interplay between ethical leadership and transactional incentives when promoting either substantial championing or symbolic greenwashing conduct (e.g., Delmas and Burbano, 2011; Ims et al., 2014; Tullberg, 2009; Weaver et al., 1999a).

Incentives provide guidance on how to behave and how to make ethical decisions (e.g., McCabe and Treviño, 1993) and have been shown to impact sustainability and ethical behavior (e.g., Butterfield et al., 1996; Goebel et al., 2012; Kaptein, 2009). The investigation of incentives is particularly important as managers can effectively and immediately influence subordinate behavior through incentives of different kind. While rewards encourage actions in a certain manner, punishment intends to discourage certain actions (Lee and Lee, 2002; Treviño et al.,

1999). It has been shown that employees not only want to be confronted with ethical rules, but that they also want these rules to be formally enforced beyond signaling the specific behavior that is expected from them (Treviño et al., 2000; Treviño and Brown, 2004). Rewards and punishments complement each other as incentives for ethical behavior. Prior studies argue that ethical behavior is only achieved, if it is encouraged while unethical behavior is also explicitly discouraged (e.g., Lee and Lee, 2002; Treviño, 1992; Treviño and Brown, 2004). Otherwise, a negative spiral effect may occur (Wenzel, 2004). For example, employees may learn that they can cheat on their ethical efforts without being penalized. However, we do not intend to hypothesize the direct impact of ethical incentives on ethical behavior as the positive effect is well supported in the literature (e.g., Chen, 2010; Kulshreshta, 2005), but rather, we explore the moderating role of ethical incentives on the link between ethical leadership and green supplier championing and greenwashing.

The line of reasoning we follow in this study is that employees are not encouraged by incentives per se but that they are rather stimulated through the actions of their supervisors as role models and via intrinsic motivation (Fehr et al., 2015; Ims et al., 2014). Nevertheless, it may be argued that incentives have several dimensions of impact and that they can serve as extrinsic motivation, for instance in monetary aspects (Tullberg, 2009). Thus, incentives that are not aligned with the intended outcome might destroy the commitment of employees as certain employees might be promoted that do not commit themselves to the suggested activities (Ims et al., 2014; Tullberg, 2009). Furthermore, some subordinates may still require explicit rewards (or punishment) as encouragement (or discouragement) to compliance (or noncompliance) with the leader in the supply chain management unit (Wenzel, 2004).

Thus, we argue that ethical leadership and ethical incentives have a complementary effect on green supplier championing, reasoning that can also be based on the complementarity of transformational and transactional leadership aspects as proclaimed by ethicists (Kaptein, 2009) and supply chain scholars (Goebel et al., 2012). Thus, we hypothesize:

H3a: *Ethical incentives moderate the relationship of ethical leadership and green supplier championing in a way that higher levels of ethical incentives lead to higher levels of green supplier championing from ethical leadership.*

Following the same line of reasoning, we argue that ethical incentives will not only positively moderate the impact on green supplier championing but that they will also attenuate the negative impact of ethical leadership on greenwashing.

H3b: *Ethical incentives moderate the relationship of ethical leadership and greenwashing in a way that higher levels of ethical incentives lead to lower levels of greenwashing from ethical leadership.*

In line with the tenets of transactional leadership theory, obedience to authority and incentives are tightly coupled concepts as two pillars for promoting follower behavior (Groves and LaRocca, 2011; Hofmann and Jones, 2005; McGregor, 2006). In a firm environment reigned by obedience to authority principles, it is important that desired activities are encouraged and unwanted behavior is clearly discouraged. We argued previously that obedience to authority positively impacts greenwashing and we extend this notion further such that ethical incentives additionally encourage greenwashing behavior. If leaders decide upon green supplier criteria themselves and in a top-down management style, this will encourage compliance rather than commitment among subordinates. Employees will be less critical when discussing the requested actions and will be more inclined to implement the activities that they are requested to pursue rather than implementing substantive practices, such as green supplier championing. Thus, we can expect that such a configuration will lead to a perverted effect of incentives that encourages a downward spiral of greenwashing behavior, even though leadership does not directly demand the employees to greenwash. Hence, the effect of incentives is thus dependent on the leadership context. Consequently, we hypothesize:

H4: *Ethical incentives moderate the relationship of obedience to authority and greenwashing in a way that higher levels of ethical incentives lead to higher levels of greenwashing from obedience to authority.*

3. Methodology

3.1. Data collection

The survey instrument was finalized based on a pre-test to ensure the content validity of scales, particularly for the construct of green supplier championing. Purchasing executives and researchers were involved, and the survey followed a key informant approach. As procurement-related constructs as well as organizational-level constructs were queried, strategic procurement managers were deemed the most appropriate and knowledgeable key informants (e.g., Cousins et al., 2006; Krause et al., 2007). To test this assumption, we asked participants to report on how knowledgeable and confident they were in responding (Cannon and Perreault Jr, 1999). The results support the premise that the key informants were appropriately selected (mean value of 5.13 on a 7-point Likert scale).

The target sample consisted of multinational companies in Germany with codes of conduct for sustainability. The German business environment was selected to control for influences of national culture. The German economy has been exposed to green-related issues for some time (Ehrgott et al., 2011). Moreover, German businesses are recognized for their green awareness and demand for green corporate citizenship from their suppliers which enabled us to detect sufficient variance across the dependent variables (Maignan and Ferrell, 2003).

Potential participants were identified based on the executive education database at one of the authors' university. To ensure the respondents were knowledgeable, we only approached people who participated in purchasing- and supply chain management-related training and who held positions in these fields. We thoroughly planned and conducted the data collection according to the total design method to ensure a high response rate (Dillman, 1978). The sample consisted of 629 procurement managers who were initially contacted via e-mail. Responses were collected via telephone interviews ($n_{ti}=70$) and online surveys ($n_{os}=48$). Telephone interviews increased the response rate and reduced the likelihood of missed values and misunderstood questions. However, as the data stems from one population, we analyzed the data in one data set. We also checked whether informant responses in telephone interviews varied significantly from those in online surveys and compared means between the two groups based on one randomly selected item per construct. No significant differences were detected between the two groups on a 5% significance level. The final sample consisted of 118 participants, corresponding to an effective response rate of 18.8%, which is comparable to other research in the field of supplier management (e.g., Hollos et al., 2012; Narasimhan and Das, 2001). The sample descriptives are provided in Table II. Since social desirability was potentially biasing results, all survey items

were formulated in such a way that respondents did not have to respond to categories for which they were personally responsible. Accordingly, the survey addressed green supplier championing and greenwashing at an organizational level as opposed to an individual level.

TAKE IN TABLE 2

3.2. Measures

The measures for our study were adopted from established and tested scales whenever possible (see Table 3). We only developed new scales for green supplier championing as a result of our literature review and expert workshops. Green supplier championing is a proactive management practice in the sourcing field that refers to the extent to which purchasers seek suppliers that pursue sustainable criteria on their own initiative rather than seeking suppliers that merely comply with applicable laws and regulations. In all other cases, such as greenwashing, we measured latent constructs based on existing scales and borrowed mainly from the influential research of Treviño et al. (1998).

Obedience to authority and ethical leadership reflect two leadership styles that influence ethical behavior in organizations. In the case of obedience to authority, employees are expected to precisely follow the instructions of superiors. In the ethical leadership construct, we assessed the extent to which senior managers serve as role models for their employees. The construct ‘ethical incentives’ is a two-factor, second-order formative construct that reflects the dual nature of incentives. Thus, it was measured by using two multi-item constructs, punishing unethical behavior and rewarding ethical behavior that assess the extent to which unethical behavior is disciplined in the organization and ethical behavior is rewarded.

Finally, greenwashing as a construct requires special attention because it measures whether a firm is only pretending to behave in a sustainable manner. As greenwashing constructs are strongly impacted by social desirability bias, we did not inquire about the practices of the respondent, but rather the practices of the firm. Symbolic measures may lead firms to implement codes of conduct that are actually only used for window-dressing as the measures mentioned in the codes of conduct are not substantially implemented, and as such must be regarded as greenwashing. It has been emphasized that such codes are only there “to pull the wool over the eyes of investors and activist groups, knowing well that their actual compliance with codes

cannot be monitored or enforced” (Painter-Morland, 2006, p. 353). Codes of conduct have been the topic of intense focus in supplier management practice and have been found to be a major element of greenwashing behavior in buying firms (Jiang, 2009b). Therefore, we specifically focus on the role of codes of conduct in investigating greenwashing. All of our sample firms had codes of conduct that were widely established in purchasing and supply management. Thus, by determining whether the code of conduct was a window-dressing measure rather than a substantial measure, the respondent directly assessed the degree of greenwashing in the firm. The scales to measure greenwashing were adopted from the influential work of Treviño et al. (1998) to ensure content validity and reliability. All constructs were measured using seven-point Likert-type scales with “strongly disagree” and “strongly agree” as anchors.

3.3. Non-response bias and common method variance

Non-response bias can be an important issue in survey research as self-selection of respondents can lead to severe biases. Some firms may wish to demonstrate how advanced they are in certain practices, while others have recently been involved in adverse events related to unethical business behavior and therefore may not want to participate in research on that topic (Ketokivi and Schroeder, 2004). Therefore, we tested for non-response bias in several ways. We asked the non-respondents to indicate the reasons for not participating in the study. Two major reasons were expressed, both of which have been addressed in earlier studies. The reasons were a lack of time/resources and a general corporate policy not to participate in surveys. Furthermore, we compared early and late responses, as suggested by Armstrong and Overton (1977). Based on the response dates, we separated the sample into two groups of early and late respondents. We analyzed the differences in demographic variables (firm size) and one randomly selected indicator per construct across the two groups. The tests did not reveal statistically significant differences for any item across the two groups. Thus, we assume that non-respondents did not have a significant impact on the results of our findings (Kanuk and Berenson, 1975).

As only one respondent per firm was available and particularly objective measures on dependent variables were not publicly available, we pursued rigorous common method bias tests (Podsakoff et al., 2003). The Harman (1967) single factor analysis did not reveal indications for common method variance. The test revealed four factors with eigenvalues greater than 1.0, thus accounting for 78.0% of the variance. The first factor accounted for 28.3% of the explained

variance while the second and third factors were 28.0% and 12.0%, respectively. These findings suggest that common method variance was not an issue for our analysis or for the subsequent results.

4. Data analysis and results

We chose the partial least square (PLS) approach and the software package SmartPLS 2.0 (Ringle et al., 2005) to estimate the parameters of our path analytic model (Chin, 1998; Lohmöller, 1989). We considered the PLS approach appropriate for particular three reasons: (1) It is suitable for relatively small samples as its estimation approach is component-based and uses bootstrapping, which makes it less prone to Type I error. (2) The estimates of the individual path coefficients are more conservative than in covariance-based techniques. Thus, PLS is well suited for establishing the direction and significance of a relationship and for determining whether exogenous variables explain a meaningful amount of variance in an endogenous construct. (3) It produces robust results for non-normal data distributions (Bagozzi and Yi, 1988; Chin, 1998; Roberts et al., 2010).

The sample size of our study fulfilled the demand of at least 50 to 100 respondents (Chin and Newsted, 1999). Other heuristics further justified our choice for PLS such as the sample size minimum of 10 times the number of maximum items per construct or 10 times the total number of used constructs (Peng and Lai, 2012). In particular, because the size of the sample was included in the calculation of the t-values in the PLS approach, high t-values with smaller sample sizes were even more meaningful than in the case of large sample sizes. Given that PLS does not work with an overall model fit index, we relied on sufficiently high R^2 values, total effect size, predictive relevance and construct reliability, as well as significant path coefficients to demonstrate the meaningfulness of our model (Chin, 1998; Ringle et al., 2012). These are displayed in Tables 4 and 5.

4.1. Construct validation

Convergent validity and unidimensionality (Fornell and Larcker, 1981) were supported for all items, as they showed statistically significant standardized loadings with their underlying constructs in a simultaneous estimation of measurement and the structural model in PLS (Anderson and Gerbing, 1988). Moreover, the average variance extracted (AVE) of each

construct ranged from 0.741 to 0.889, thus exceeding the threshold of 0.5. All tests of discriminant validity were similarly supportive. Table 4 illustrates that each construct shares a greater variance with its measures than it does with other constructs (Chin, 1998; Fornell and Larcker, 1981; Hulland, 1999). This is further confirmed by comparing the cross loadings of the items (Chin, 1998). Reliability was established using internal consistency method estimated by Cronbach's alpha (Cronbach, 1951; Litwin, 1995) and composite reliability (CR) (Fornell and Larcker, 1981). The Cronbach alpha values range from 0.803 to 0.968, and the CR values range from 0.896 to 0.974, and exceed all the minimum threshold of 0.7. These results demonstrate the reliability and validity of the measurement model. All descriptive data are presented in Table 3 and Table 4.

TAKE IN TABLE 3

TAKE IN TABLE 4

4.2. Hypotheses testing

The structural model depicted in Figure 2 was utilized to test our research model. We used the standard the bootstrapping algorithm for rigorous PLS analysis to test the significance levels of our hypotheses (Chin, 1998; Chin and Newsted, 1999). Henseler and Fassott (2010) recommend a minimum of 500 samples or data sets to decrease the effects of possible random sampling errors; therefore, we used 2,000 data sets since adding additional data sets would have made only a marginal difference. Furthermore, we used different data sets (1,000 and 1,500) as sensitivity analysis to demonstrate that our results are stable. This model explained 20.7% of the variance in greenwashing and 53.6% of the variance in green supplier championing.

While the effect of ethical leadership on green supplier championing was statistically significant (**H1a**: $p < 0.01$), the negative effect of ethical leadership on greenwashing was not significant (**H1b**: ns). The effect of obedience to authority on greenwashing was statistically significant (**H2**: $p < 0.01$). Among the moderating hypotheses concerning the complementary effect of ethical incentives in conjunction with ethical leadership, we did not find support for such an effect on green supplier championing (**H3a**: ns) or greenwashing (**H3b**: ns), while the

hypothesized moderating effect between obedience to authority and ethical incentives on greenwashing was supported (**H4**: $p < 0.01$).

To determine if the significant moderating effect was a major or minor effect, we applied the pseudo F test¹, which compared the additional effect of moderation on the R^2 values on green supplier championing and greenwashing. The results of this analysis are depicted in Table 5. The change in R^2 was found to be statistically significant at $p < 0.01$ for **H4**.

TAKE IN TABLE 5

TAKE IN FIGURE 2

5. Discussion and conclusion

Our suggested model consists of the three core drivers of green supplier championing and greenwashing: We investigated the effect of ethical leadership, obedience to authority, and ethical incentives. Furthermore, we assessed the interaction effects between incentives and the two leadership styles when assessing their impact on green supplier championing and greenwashing.

We find support for the positive impact of ethical leadership on green supplier championing. This is in line with prior literature that finds positive effects of ethical leadership on ethical outcomes in organizations and the overall ethical atmosphere (e.g., Fernández and Camacho, 2016; Grojean et al., 2004; Metcalf and Benn, 2013). Particularly, this finding contributes to the call for more research on the effect of leadership styles on the implementation of CSR and sustainability in organizations (Eisenbeiss, 2012; Waldmann and Siegel, 2008). The current concept of ethical leadership entails four essential normative reference points of which the responsibility/sustainability aspect is often overlooked (Eisenbeiss, 2012). However, this aspect illustrates a leader's orientation towards a "long-term focus on organizational

¹ The pseudo F-test is similar to the test employed to test nested models in stepwise linear regression. The f^2 statistic is computed based on the differences in R^2 . The f^2 value is calculated by dividing $(R^2_{\text{partial}} - R^2_{\text{full}})$ by $(1 - R^2_{\text{partial}})$. The pseudo F statistic is calculated by multiplying f^2 by $(n - k - 1)$, with a 1 and $(n - k)$ degree of freedom where n is the sample size and k is the number of independent constructs in the model.

performance, reflection upon the impact of decisions on society and the natural environment” such as in the practice of green supplier championing (Eisenbeiss, 2012, p. 796).

However, ethical leadership does not cause firms to significantly diminish greenwashing despite the estimated negative path coefficients. In addition, we find that obedience to authority is positively associated with greenwashing. This finding supports Treviño and Brown (2004, p. 73)’s statement that “bad behavior doesn’t always result from flawed individuals. Instead, it may result from a system that encourages or supports flawed behaviour”. Hence, if no ethical leader is present in an organization, employees might be directed and “obey” only towards the ultimate goal of business, which is to increase its profits, thereby neglecting CSR and sustainability issues (Friedman, 1970) as prescribed by the economic logic and implicit or explicit management targets. Accordingly, prior research has shown that the relationship towards suppliers in an organization might be ethical or exploitative, dependent on the ethical setting within the supply chain management function (Schleper et al., 2015).

The combined results show that obedience to authority (as important aspects of transactional leadership) and ethical leadership do not complement each other in achieving the reduction of greenwashing in supplier management. Based on the positive direct effects estimated for Hypothesis 1a and Hypothesis 2, we conclude that the two leadership styles conflict with each other if the firm seeks to implement green supplier championing. This further highlights the relevance of the conscious behavior of leaders in conjunction with sustainable management along the supply chain as ethical leadership has been determined to be the way to attain substantial green supplier championing practices (Fernández and Camacho, 2016; Metcalf and Benn, 2013).

Adding further to this discussion, ethical incentives do not further support ethical leaders in implementing such advanced substantial practices, which is at least partially counterintuitive. Rather, if firms would like to focus on practices that actually go beyond the usually requested commitment to sustainability, incentives do not provide additional means to persuade subordinates to do so. A common assumption for this finding is the so-called “crowding-out effect” also often referred to as “the hidden cost of reward” (Deci, 1976; Ims et al., 2014). In some cases, the intrinsic motivation to behave ethically or in our case to pursue sustainable supply chain management (i.e., green supplier championing) can be reduced by external rewards (i.e., incentives) (Deci and Ryan, 2000; Frey, 1997). Hence, in the same line of argumentation,

we do not find support for the hypothesis that higher levels of ethical incentives lead to lower levels of greenwashing from ethical leadership. Another explanation for this finding could be the bi-dimensional understanding of ethical leadership as consisting of a “moral person” and a “moral manager” (Treviño, et al. 2000; Treviño and Nelson, 2011). Whereas the moral person aspect refers to what has been described as the ethical role model, illustrating the right and good behavior of the leader, the moral manager needs to draw on rather transactional means, such as rewarding good and right behavior and punishing unethical actions (Bonner et al., 2016). Therefore, the incentive aspect could already be entangled in the ethical leadership construct itself. However, the results highlight that ethical incentives can serve as a substitute for ethical leadership as the direct impact of incentives on green supplier championing is positive (Table 4; Table 5). This positive direct effect has been widely investigated and supported by past research (e.g., Treviño, 1992; Treviño et al., 1999; Treviño et al., 2000). *Ceteris paribus*, senior managers should lead the organization by example and combine it with clear incentive and punishment systems to foster green supplier championing (cp. Locke et al., 2009; Treviño and Brown, 2004; Weaver et al., 1999a; 1999b) The trade-off relationship between incentives and ethical leadership is a novel finding in this context, while our results complement earlier research demonstrating the central role of exemplary executive management behavior in promoting the implementation of ethical practices in firms (e.g., Fernández and Camacho, 2016; Grojean et al., 2004; Weaver et al., 1999b). Particularly in the context of proactive green supplier championing practices, such leadership appears necessary if employees are to professionally and systematically pursue such time-consuming practices.

Moreover, the previous finding is particularly noteworthy as the focus on obedience to authority in conjunction with ethical incentives may foster the beginning of a greenwashing spiral (Wenzel, 2004). Thus, for the implementation of green supplier championing behavior and a simultaneous avoidance of greenwashing, employee empowerment through ethical leadership, as opposed to obedience to authority, seems indispensable (Brown et al., 2005). Sustainable practices cannot be genuinely implemented simply because executive management incentivize ethical behaviors or punish unethical actions in an environment where obedience to authority is present. Thus, ethical incentives and obedience to authority seem to complement each other in the promotion of greenwashing. Although senior management might have good intentions requesting ethical conduct based on incentives, under the strong presence of requested obedience

to authority, such leadership may pervert effects and lead to increased greenwashing. Hence, the sole reliance on incentives is likely to backfire if the organization is managed by obedience to authority given that both the direct and the moderation hypotheses focusing on obedience to authority and greenwashing were supported. As opposed to enforcing sustainability behavior with suppliers through structured directives and incentives, upper management must additionally lead by example when seeking to enhance the firm's level of green supplier championing. Our finding complements a recent finding on the need to provide creative leeway for environmental entrepreneurship within the firm to promote green supplier championing (Paulraj, 2011). Ethical leadership leaves sufficient room for enthusiastic subordinates to develop championing approaches and behaviors without actually predefining what championing behavior constitutes in gestalt of codes of conduct and incentives.

As our hypothesis on the interaction effect between ethical incentives and ethical leadership is not supported, it seems reasonable to conclude that ethical leadership and obedience to authority are in conflict with each other when reducing greenwashing. Moreover, only ethical leadership supports green supplier championing. Based on these results and the discussed implications, we can establish an order of events for managers striving to configure and implement green supplier championing. Managers should start by creating an atmosphere conducive to sustainability principles based on their leadership style before they formally implement reward and punishment mechanisms.

Moreover, extant literature suggests that incentives are only effective if the organization is actually able to pose a credible threat to detect unethical behavior (e.g., Herath and Rao, 2009; Li et al., 2010; Schleper and Busse, 2013). The feeling of employees that they will not be detected or be penalized might provoke greenwashing rather than the intended green supplier championing. Thus, the configuration of sustainable product and supplier assessment tools should precede the implementation of ethical incentives, thus allowing an organization to gain experience in applying green practices and to generate learning effects (Reuter et al., 2010) before sustainable supplier performance and individual employee behavior are formally monitored and incentivized.

To conclude, our results suggest that incentives do not always lead to the intended results if behavioral uncertainty in sustainability is particularly high and potentially damaging to the firm (Cousins et al., 2004). Instead, we found that incentives may even lead to negative

consequences when leadership is mostly based on obedience to authority. Furthermore, our results provide evidence that if firms want to consistently pursue substantial green supplier championing, it is necessary to establish a culture founded on ethical leadership rather than on expected obedience to authority. Finally, it is necessary to consider green supplier championing and greenwashing simultaneously as they seem to be two sides of the same coin. Thus, decision makers must be aware that their leadership styles and the incentives they set may have undesirable side effects when striving for green supplier championing.

6. Limitations and further research

Our study has several limitations which we will briefly line out in the following. First, the sample size is relatively small and thus requires further studies to confirm the findings of our study, particularly in different contexts, such as industry or region. Second, our study focuses particularly on a supplier management context, which is a specific field. Thus, the results might not be easily generalized to other functional areas in the research domain of business ethics. Third, although we focused on common method variance, other studies might find it beneficial to seek responses from several individuals per firm or to assess the longitudinal effects, which was unfortunately not possible in our research design. Fourth, because we investigated a cross-industry sample, the observed empirical relationships are not necessarily causal. A focus on a particular industry might help future research in this respect. Finally, in this study, greenwashing was captured based on the notion of superficial implementation of codes of conduct that represent only one possible dimension of this multidimensional construct. Hence, the results can only be generalized based on the notion of overstating practices in their codes of conduct, which is not given for all firms. Hence, some business ethicists will probably not agree with this operationalization of the concept. Thus, the measurement scale for greenwashing provides potential for future studies to develop a more unified conceptualization of the phenomenon. Of course, the way we conceptualized greenwashing in this study may have also impacted our findings.

Moreover, in conducting this research, several fruitful avenues for further research, in addition to methodological opportunities, became apparent. The most intriguing research gap still seems to lie in the combination of supply chain management research and research on ethical leadership and behavior. Although the cross-fertilization of these domains of research has

recently increased, the analysis of further dimensions of ethical leadership culture on supply chain management practices is largely unknown both in an ethical as well as in a general context. Hence, it would be interesting to investigate the extent to which sustainability implementation throughout a supply chain is somehow driven by an ethical “clan” culture established during the longevity of buyer-supplier relationships. Furthermore, it may be interesting to further explore how the likelihood of detection and the severity of the punishment motivates or disincentivizes individuals in an organization to champion or to greenwash, as the valance or likelihood of detection might influence their behavior.

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Tables and figures

| Constructs | Definition | Based on |
|-----------------------------------|---|---|
| Ethical incentives | The extent to which ethical behavior is rewarded and unethical is punished | Treviño et al., 1998 |
| Obedience to authority | The extent to which leaders expect employees to obey authority without further query | Treviño et al., 1998 |
| Ethical leadership | The extent to which leaders act as role models for ethical business conduct | Treviño et al., 1998 |
| Greenwashing | The extent to which sustainability measures are substantiated to a lesser degree in firm practices and measures than they are symbolically alluded to in the firm's code of conduct. | Delmas and Burbano, 2011; Ramus and Montiel, 2005 |
| Green supplier championing | The extent to which the buying firm pursues suppliers that are best practice firms in sustainability management, thereby further driving and enforcing sustainability in the upstream supply chain. | Cousins et al., 2004; Handfield et al., 2002; Pagell et al., 2010 |

Table 1. Construct definitions

| Classification | N | Percentage |
|---|------------|-------------------|
| Types of industry | | |
| Manufacturing | 57 | 48.3 |
| Pharmaceuticals and chemicals | 20 | 17.0 |
| Transportation and public utilities | 13 | 11.1 |
| Services | 10 | 8.4 |
| Fashion | 5 | 4.2 |
| Food & beverages | 5 | 4.2 |
| Others | 8 | 6.8 |
| Total | 118 | 100 |
| Annual sales revenues in million € | | |
| < €50 million | 14 | 11.9 |
| €50 million to €500 million | 23 | 19.5 |
| €500 million to €1 billion | 13 | 11.0 |
| €1 billion to €10 billion | 38 | 32.2 |
| > €10 billion | 30 | 25.4 |
| Total | 118 | 100 |
| Mode of data collection | | |
| Telephone interview | 70 | 59.3 |
| Online survey | 48 | 40.7 |
| Total | 118 | 100 |

Table 2. Profile of sample organizations

| Indicators | Mean | SD ^a | Load- ing ^b |
|--|------|-----------------|---------------------------|
| Ethical leadership (CA=0.958; CR=0.970; AVE=0.889) ^c | | | |
| Senior managers regularly show that they care about ethics. | 5.07 | 1.66 | 0.955 |
| Senior managers model ethical behavior. | 4.86 | 1.50 | 0.949 |
| Ethical behavior is the norm in our organization | 5.35 | 1.52 | 0.920 |
| Senior managers guide decision making in an ethical direction. | 4.88 | 1.60 | 0.946 |
| Obedience to authority (CA=0.826; CR=0.896; AVE=0.741) | | | |
| The boss is always right in our organization. | 2.92 | 1.69 | 0.857 |
| Our organization expects obedience to authority. | 3.72 | 1.62 | 0.872 |
| People in our organization are expected to do as they are told. | 4.20 | 1.51 | 0.852 |
| Punishing unethical behavior^d (CA=0.803; CR=0.910; AVE=0.814) | | | |
| Penalties for unethical behavior are strictly enforced in our organization. | 4.15 | 1.71 | 0.892 |
| Management in our organization disciplines unethical behavior when it occurs. | 5.11 | 1.47 | 0.881 |
| Unethical behavior is punished in our organization. | 4.45 | 1.71 | 0.933 |
| Rewarding ethical behavior^d (CA=0.803; CR=0.910; AVE=0.836) | | | |
| Ethical behavior is rewarded in our organization. | 3.82 | 1.69 | 0.917 |
| People of integrity are rewarded in our organization. | 4.03 | 1.62 | 0.911 |
| In our organization, employees who act unethically still receive formal organizational rewards (reversely coded).* | - | - | - |
| Green supplier championing (CA=0.968; CR=0.974; AVE=0.861) | | | |
| Purchasing professionals in our organization consciously seek suppliers who | | | |
| ...encourage the development and diffusion of environmentally friendly technologies. | 4.65 | 1.64 | 0.946 |
| ...outperform their competitors regarding emissions or waste levels. | 3.82 | 1.73 | 0.92 |
| ...support a precautionary approach to environmental challenges. | 4.54 | 1.66 | 0.942 |
| ...undertake initiatives to promote greater environmental responsibility. | 4.46 | 1.67 | 0.942 |
| ...source from environmentally friendly sub-supplier. | 4.16 | 1.71 | 0.926 |

| | | | |
|---|------|------|-------|
| ...are leaders in efficient and clean manufacturing. | 4.09 | 1.79 | 0.886 |
| Greenwashing (CA=0.822; CR=0.918; AVE=0.848) | | | |
| The code of conduct serves only as ‘window dressing’ in our organization. | 2.03 | 1.54 | 0.907 |
| The code of conduct serves only to maintain the organization’s public image. | 2.04 | 1.52 | 0.934 |
| <p>a Standard deviation</p> <p>b All standardized loadings are significant at $p < 0.01$</p> <p>c CA= Cronbach’s Alpha; CR = composite reliability; AVE = average variance extracted.</p> <p>d Part of the second-order construct - ethical incentives</p> <p>* Item deleted during analysis due to low loading</p> | | | |

Table 3. Validation of constructs

| Constructs | Mean | SD ^a | EL | OA | PUN | REW | GSC | GW |
|--|-------------------|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Ethical leadership (EL) | 4.98 ^b | 1.46 | 0.81 | | | | | |
| Obedience to authority (OA) | 3.64 ^c | 1.38 | 0.30 | 0.93 | | | | |
| Punishing unethical behavior (PUN) | 4.52 | 1.43 | 0.79 | 0.22 | 0.89 | | | |
| Rewarding ethical behavior (REW) | 3.91 | 1.47 | 0.59 | 0.10 | 0.55 | 0.79 | | |
| Green supplier championing (GSC) | 4.36 | 1.46 | 0.71 | 0.25 | 0.58 | 0.58 | 0.79 | |
| Greenwashing (GW) | 2.02 | 1.32 | 0.05 | 0.39 | 0.00 | 0.09 | 0.01 | 0.81 |
| <p>a Standard deviation</p> <p>b The square root of the construct’s AVE is provided along the diagonal (in bold)</p> <p>c Off-diagonal numbers are the Pearson correlations between the constructs</p> | | | | | | | | |

Table 4. Correlation of constructs

| Substantive relationships | Direct effects | | | Direct effects and moderation effects | | |
|---|----------------------|-----------|------------|---------------------------------------|---------|------------|
| | Path coefficient | t-value | Std. error | Path coefficient | t-value | Std. error |
| H1a: Ethical leadership - Green supplier championing (+) | 0.486** | 4.924 | 0.099 | 0.493** | 4.864 | 0.101 |
| H1b: Ethical Leadership - Greenwashing (-) | -0.161 ^{ns} | 0.978 | 0.164 | -0.093 ^{ns} | 0.656 | 0.142 |
| H2: Obedience to authority - Greenwashing (+) | 0.415** | 5.079 | 0.082 | 0.413** | 4.592 | 0.090 |
| H3a: Ethical leadership & ethical incentives - Green supplier championing (+) | | | | 0.013 ^{ns} | 0.155 | 0.084 |
| H3b: Ethical Leadership & ethical incentives - Greenwashing | | | | 0.069 ^{ns} | 0.565 | 0.123 |
| H4: Obedience to authority & ethical incentives - Greenwashing (+) | | | | 0.215** | 2.630 | 0.082 |
| | | | | | | |
| Explained variance of endogenous variables | Q2 | R2 | R2 | F-statistic | | |
| Green supplier championing | 0.448 | 0.536 | 0.536 | 0.00 | | |
| Greenwashing | 0.080 | 0.159 | 0.207 | 6.598 | | |
| ns not significant; * p < 0.05; ** p < 0.01 | | | | | | |

Table 5. Estimations of the structural model

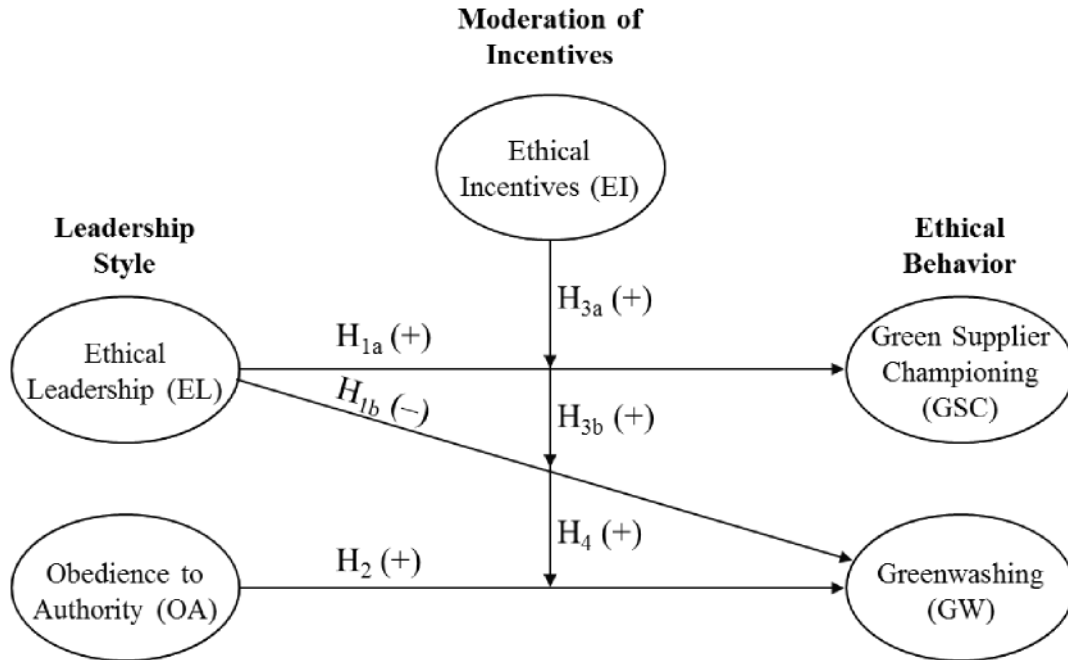


Figure 1. Research framework

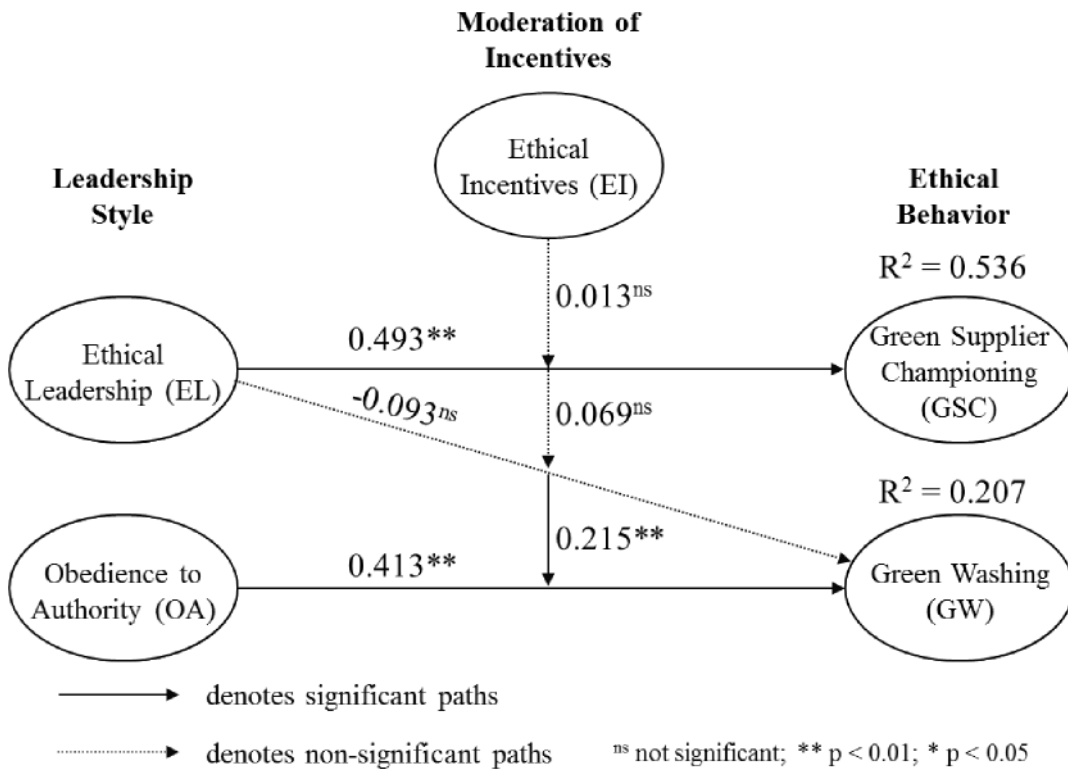


Figure 2. Standardized parameter estimates of the structural model (moderated model)