Original Empirical Article

The Impact of Individual Attitudinal and Organizational Variables on Workplace Environmentally Friendly Behaviors

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Abstract: Although research on corporate social responsibility (CSR) has grown steadily, little research has focused on CSR at the individual level. In addition, research on the role of environmental friendly organizational citizenship behaviors (OCBs) within CSR initiatives is scarce. In response to this gap and recent calls for further research on both individual and organizational variables of employees' environmentally friendly, or green, behaviors, this article sheds light on the influence of these variables on three types of green employee behaviors simultaneously: recycling, energy savings, and printing reduction. An initial theoretical model identifies both individual (employees' general environmentally friendly attitudes and the importance of an organization's environmentally friendly reputation to the employee) and organizational (perceived environmental behavior of an organization and perceived incentives and support from an organization) variables that affect different types of green behaviors as a stepping stone for further research. The results reveal managerial implications and future research directions on the design of effective social marketing interventions that motivate different types of OCBs in the workplace. In particular, the results suggest that creating separate interventions for each type of environmental behavior, as well as for each organization, sector, and type of organization (public vs. private), is necessary. In addition, this research illustrates patterns of attitudes, perceptions, and behaviors by exploring individual and organizational variables and behaviors across seven different organizations belonging to different sectors.

Keywords: corporate social responsibility, organizational citizenship behaviors, environmental attitudes, employee environmental behavior, environmental perceptions, organizational incentives, organizational support, social marketing

Introduction

Corporate social responsibility (CSR) refers to "context-specific organizational actions and policies that take into account stakeholders' expectations and the triple bottom line of economic, social, and environmental performance" (Aguinis, 2011, p. 855). A growing body of research in CSR has focused on institutional (e.g., laws, standards) and organizational (macro research on boards and top management groups) aspects, while largely ignoring the individual or micro level, that is, the role of internal stakeholders such as employees (Vlachos et al., 2010; Hansen et al., 2011; Chun et al., 2013). In relation to this, Aguinis and Glavas (2012, p. 955) note a clear gap in the literature, noting a "dearth of micro-level research" in this area. They further highlight important predictors and outcomes of engagement with CSR and the moderators and mediators of CSR outcomes. Finally, they identify organizational citizenship behaviors (OCBs) as an outcome from research on CSR at the individual/micro level.

OCBs "represent constructive or cooperative gestures that are neither mandatory in-role behaviors nor directly or contractually compensated by formal reward systems" (Organ and Konovsky, 1989, p. 157). Research has examined OCBs both generally in terms of broad aspects (Podsakoff et al., 1990; Lin et al., 2010; Hansen et al., 2011) and specifically (e.g., volunteering; Jones, 2010). Podsakoff et al. (1990) identify five types of OCBs: altruism, conscientiousness, sportsmanship, courtesy, and civic virtue. Meta-analytic studies have documented their relationship to performance (e.g., productivity, efficiency, reduced costs, customer satisfaction, unit-level turnover) (Podsakoff et al., 2009).

Chun et al. (2013) note the importance of both organizational commitment and OCB in terms of linking corporate ethics to the financial performance of the firm. However, one OCB that has received scant attention in the literature is employee environmental behaviors—the focus of this research. This type of behavior "on the part of the individual … indicates that he/she responsibly participates in, is involved in, or is concerned about the life of the company" (Podsakoff et al., 1990, p. 115). Smith and O'Sullivan (2012) describe these behaviors as employees' environmentally responsible, or green, OCBs. Internal initiatives to encourage such behavior, generally through some form of social marketing, have increased in recent years as organizations strive to be more socially responsible to compete for consumers or respond to stakeholders' expectations (Hansen et al., 2011). However, many companies find this difficult to achieve (Lindgreen and Swaen, 2010).

While research has extensively studied the environmental or green[1] behavior of individuals within the household, little research has examined the environmental behavior of employees within organizations, let alone the use of social marketing campaigns and interventions in the workplace (Lo et al., 2012a). However, such behavior helps reduce organizations' carbon footprint; Pérez-Lombard et al. (2008) note that energy consumption from buildings is an increasing concern, fuelled by population growth, an increase in demand for buildings and comfort levels, and the rise in time spent inside buildings. They find that office buildings within the commercial and retail sectors account for 17% of U.K. energy consumption and 2% of total energy use. In offices, 55%

[1] We use the words "environmentally friendly behavior," "green behavior," and "pro-environmental behavior" interchangeably in this article. Extant literature has also coined these terms to describe an individual's behavior .

of energy consumption is through heating, ventilation, and air-conditioning, 17% is from lighting, and the remainder is from equipment, food preparation, and refrigeration.

Early studies have compared this area directly with household environmental behavior, but numerous differences exist regarding the motivation for and issues surrounding employees' environmental behavior. Andersson et al. (2005, p. 302) note that the "determinants of pro-environmental behavior within organizations are different than the determinants of other types of pro-environmental behavior." In general, employees do not have the same financial interest in the workplace as they do at home. Employees are not typically concerned with their energy usage, and they have little context for how much energy they use because devices are often shared by multiple employees (Siero et al., 1996; Carrico and Riemer, 2011). However, Carrico and Riemer (2011) argue that employees are a captive audience and thus can be targeted through low-costs means, such as e-mails and e-newsletters.

Prior research has focused on two factors that affect employee environmental behavior and the success of social marketing interventions: individual and organizational (either objective or subjective). Individual factors include attitudes, norms, self-efficacy, habit, motivation, knowledge, awareness, and socio-demographics; organizational variables have received largely inconclusive evidence on their role (Lo et al., 2012a). In addition, research has mostly explored individual and organizational variables in isolation, with no attempt to determine how they affect each other or the behavior of individuals within organizations. Understanding these associations (Lo et al., 2012a) is vital because an increasing number of organizations (both public and private) are

attempting to improve their employees' pro-environmental behavior through a range of incentives, green champion schemes, and intervention programs.

This article contributes directly to the limited literature and calls for future research in the areas of both employees' environmental OCB and individual-level CSR. First, this study contributes theoretically by attempting to create and test a theoretical model that identifies both individual attitudinal and organizational variables and their associations. Second, it explores the impact of these variables on several green behaviors simultaneously. Thus, this is one of the first studies to examine simultaneously more than one behavior type and to test whether one behavior generalizes to another. This study also explores green behaviors across seven different organizations and attempts to shed light on their commonalities and differences, to advance research in this area.

We examined three types of green behavior, each of which has a significant impact on energy consumption (Pérez-Lombard et al. 2008) and/or the environment: (1) recycling behavior, or the process of placing waste materials (e.g., paper, cardboard, aluminum cans, plastic cups/bottles, glass, toner, and/or batteries) into appropriate bins, designed to collect materials that can be re-used or made into new products; (2) energy saving behavior, or the use of less energy services, such as switching off computers and lights when not in use and/or opening or closing windows, instead of using heating and cooling equipment; and (3) printing reduction behavior, or actions to minimize unnecessary printing (e.g., printing e-mails for ease of reference).

Literature Review

Although prior research has discussed and tested several individual and organizational determinants of employee pro-environmental behavior, we concentrate on one individual factor (i.e., attitudes) along with several organizational variables (i.e., environmental reputation, environmental behavior, support, and incentives). We also describe approaches to the measurement of environmental behavior. Finally, we develop testable hypotheses for the constructs investigated in this study, along with a conceptual theoretical model.

Environmental Attitudes

Attitudes are a key individual antecedent of CSR (Jones, 2010; Chun et al., 2013) and are often used to predict employee environmental behavior. In the employee environmental behavior literature, some studies have used the environmental/ecological worldview as a predictor of behavior (e.g., Scherbaum et al., 2008), while others have incorporated beliefs into their measurement of attitudes (Wehrmeyer and McNeil, 2000; Tudor et al., 2007, 2008). Although many studies have used attitudes to predict employee environmental behavior, each study takes a different approach to defining and measuring attitudes, making it difficult to compare findings directly. For example, Siero et al. (1989) state that attitudes are a sum of beliefs and evaluations, while Andersson et al. (2005) define and measure attitudes as an ecological worldview. Other studies have used attitudes as a moderator rather than a predictor variable (Cluley, 2010; Bissing-Olson et al., 2012).

Some studies have found that attitudes are a key predictor of environmental behaviors (Marans and Lee, 1993; Tudor et al., 2007, 2008; Robertson and Barling,

2013), while others have not found this to be true (Siero et al., 1996; Andersson et al., 2005), in line with the argument that the antecedents of green behaviors may differ (McKenzie-Mohr et al., 1995). Still other studies have found that attitudes have a moderate correlation with behavioral intention and a weaker relationship to behavior (Lo et al., 2012b). Although the results regarding the relationship between environmental attitudes and behaviors are mixed, we advance the following hypothesis:

> H1: General environmentally friendly attitudes have a positive and significant relationship to environmentally friendly behaviors, such as (a) recycling, (b) energy savings, and (c) printing reduction.

Environmental Reputation and Environmental Behavior of the Organization

Hansen et al. (2011) and Rupp et al. (2006) note that employees respond positively to the CSR activities of their employers (i.e., their perceptions of the organization's environmental reputation and behavior) and, specifically, that employees who perceive their employer as more socially responsible are more likely to engage in OCBs. Conversely, if organizations do not behave in a socially responsible way, employees are likely to exhibit negative work attitudes and behaviors (Rupp et al., 2006; Hansen et al., 2011). Overall, the CSR literature suggests that employees' perceptions of their organizations' CSR help determine both their attitudes and behaviors.

However, scant research has examined organizations' environmental reputation and behavior (as perceived by employees), and little consensus exists on the grouping of different organizational aspects in studies exploring or measuring employee pro-environmental behavior. Several research areas help inform how these variables might influence employee behavior. First, Tudor et al. (2008) consider the role of

organizational focus in their case study in the United Kingdom. They find that the centralized focus and bureaucratic control of the organization determine the practices and levels of attention and resources directed toward sustainable waste management. They also note that the organizational focus strongly influences individual motivation and describe it as one of the most significant influences on behavior. Finally, they highlight the importance of *organizational structure* and, in particular, how it facilitates individual behavior, decision making, and feedback up the hierarchical chain, thus affecting employees' motivation and behavior. Scherbaum et al. (2008) also contend that organizational structures, policies, interventions, and characteristics can facilitate or inhibit desired energy-use behaviors within organizations and must be taken into consideration.

Second, research in the CSR, business ethics, and employee environmental behavior literature streams has used *organizational commitment* to predict employee engagement (Aguinis and Glavas, 2012; Chun et al., 2013). Several studies have also treated the role of organizational commitment on environmental issues as a determinant of employee behavior. For example, in exploring the role of organizational commitment on recycling, Lee et al. (1995) find that it is a moderate predictor of both general office recycling behavior and office paper reduction. In addition, Ramus and Steger (2000) find that the reputation and perception of a company's environmental policy (representing commitment to the environment) help determine employees' likelihood to develop eco-initiatives and partake in pro-environmental behavior within the organization. Andersson et al. (2005) also report that when supervisors perceive their company as committed to

environmental sustainability, they are more likely to demonstrate pro-environmental behaviors and also to direct these to their supervised employees.

Overall, the results of prior research suggest that an organization's pro-environmental behavior, through its focus, structure, or commitment (the perceived environmental behavior of the organization), affects employees' behavior and attitudes. Moreover, though not explicitly hypothesized or tested within the context of employee environmental behaviors, employees' perception of their organization's environmental behavior is also likely to be affected by how important they consider its environmental reputation, which in turn is likely to be affected by employees' environmental attitudes. In general, research suggests that individuals develop perceptions according to their prior knowledge and pre-existing attitudes (Brucks, 1985). In addition, studies exploring person–organization fit have shown that the degree of similarity/dissimilarity between employees' values, beliefs, and attitudes and those of the organization influences (1) employees' commitment and employee–company identification (Turker, 2009; Kim et al., 2010), (2) how the employees perceive the organization's behavior, and (3) how much employees identify with the organization and judge the importance of its practices (Kim et al., 2010). However, attitudes differ, and Rodrigo and Arenas (2008) note that different typologies of employees and their behavior toward CSR programs exist, in addition to highlighting the significant role of attitudes in committed or indifferent employees.

Therefore, it is important to understand how and in what context employees' attitudes affect their perceptions of the organization and its behavior, as well as the relationships among constructs. For example, it may be that an employee who has higher

pro-environmental attitudes is a harsher critic of an organization's behaviors because he or she places more importance on the organization's environmental friendly reputation (a lack of person–organization fit) than an employee with lower pro-environmental attitudes. Alternatively, an employee with a more positive attitude toward the environment may have a more positive attitude toward the organization if he or she is committed to CSR initiatives and related OCBs (a higher level of person–organization fit).

In addition, if an employee perceives the organization's environmentally friendly reputation as important, this will also likely affect how he or she perceives the organization's environmental behavior. Previous research has shown that an organization's CSR activities affect employees' perceptions of the firm (Rupp et al., 2006) and how highly they speak about the company to outsiders (Dawkins and Lewis, 2003), which involves judging the organization's behavior and its attractiveness. Melewar and Karaosmanoglu (2006) also note a strong link between what organizations "do" and perceptions of what they "are." Therefore, we investigate how individual attitudes affect both the perceived level of importance of an organization's environmentally friendly reputation and its perceived environmentally friendly behavior and explore the relationships between these constructs. Thus, we hypothesize the following:

> H2: The perceived environmental behavior of an organization has a positive and significant relationship to environmentally friendly behaviors, such as (a) recycling, (b) energy savings, and (c) printing reduction.

H3: General environmentally friendly attitudes have a positive and significant relationship to the perceived importance of an organization's environmentally friendly reputation.

H4: General environmentally friendly attitudes have a negative and significant relationship to the perceived environmental behavior of an organization.

H5: The perceived importance of an organization's environmentally friendly reputation has a positive and significant relationship to perceived environmental behavior of an organization.

Support and Incentives

Several studies have highlighted the importance of leadership and support in determining employee environmental behavior within the workplace and included variables such as encouragement, competence building, communications, rewards (including incentives), and recognition through the management of goals (Ramus and Steger, 2000). Smith and O'Sullivan (2012) note elements of formalization and flexibility, spatial distance from the leader, advisory/staff support, group cohesiveness, and organizational support as key elements of support and leadership. In their qualitative study, they find that a general lack of organizational support, environmental leadership, or access to decision makers all affect employees' environmental behaviors and decisions. Tudor et al. (2008) also find that manager support for the implementation of environmental policies is limited. Grensing-Pophal (1993) argues that support is particularly important when employees are developing or running CSR or related programs. Thus, high levels of perceived organizational support are likely to result in greater pro-environmental behaviors in the workplace and a view of the organization as

environmentally friendly. In addition, Ramus and Steger (2000) find that employees who perceived strong signals of support and encouragement from the organization were more likely to develop and implement eco-behaviors, which in turn can positively affect the environment.

While several studies have included incentives (both monetary and non-monetary) in general support behaviors (e.g., Ramus and Steger 2000), others have explored these types of motivational incentives for employee environmental behavior separately. Both Tudor et al. (2008) and Siero et al. (1989) suggest that general support behaviors are strongly related to the motivation to comply and the organizational focus, structure, and culture. Marans and Lee (1993) and Lee et al. (1995) explore employees' attitudes toward the role of economic incentives on environmental behaviors within the workplace. They find that economic motivation was not an effective predictor of behavior; more specifically, those who considered economic incentives and monetary rewards unimportant tended to be more active in their pro-environmental behaviors. However, general environmental studies suggest that incentives (often in the form of a financial payment or reduction in costs) can be effective in developing pro-environmental behavior (Kollmus and Agyeman, 2002), but how effective they are may depend on their interaction with a range of factors such as goals (Lindenberg and Steg, 2007), and information (Stern, 1999; 2000).

However, support and incentives form a part of the perceived overall environmental behavior of the firm (Ramus and Steger, 2000) and thus are likely to have a positive effect on employees' perceptions of the organization's overall environmental behavior. In addition, the amount of incentives offered to employees can affect their

perceptions of support from the organization (Smith and O'Sullivan, 2012). Likewise, both incentives and support might influence the perceived importance of an organization's environmentally friendly reputation.

In general, perceptions are closely related to and formed on the basis of attitudes (Gilinsky, 1955). According to the person–organization fit literature, how employees perceive an organization and its behaviors may determine their fit with the organization in terms of their ethics, values, attitudes, and other characteristics (Ambrose et al., 2008). Employees will perceive organizations differently depending on their own ethical expectations (Coldwell et al., 2008), which in turn are based on their ethical attitudes. Finegan (1994) also suggests that employees' own personal values affect their judgment of workplace behaviors. In addition, as noted previously, the organization's CSR activities will affect employees' perceptions. Therefore, general environmentally friendly attitudes might influence perceptions of an organization's incentives and support. Although these relationships are logical and appear in the person–organization fit and CSR literature streams, they have not been formally investigated in the context researched herein. Therefore, we hypothesize the following:

H6: Employees' perceived level of organizational incentives has a positive and significant relationship to the perceived environmental behavior of an organization.

H7: Employees' perceived level of organizational incentives has a positive and significant relationship to environmentally friendly behaviors, such as (a) recycling, (b) energy savings, and (c) printing reduction.

H8: The perceived level of organizational support has a positive and significant relationship to the perceived environmental behavior of an organization.

H9: The perceived level of organizational support has a positive and significant relationship to environmentally friendly behaviors, such as (a) recycling, (b) energy savings, and (c) printing reduction.

H10: The perceived level of organizational incentives offered to employees has a positive and significant relationship to the perceived level of organizational support.

H11: The perceived level of organizational incentives offered to employees has a positive and significant relationship to the perceived importance of an organization's environmentally friendly reputation.

H12: The perceived level of organizational support has a positive and significant relationship to the perceived importance of an organization's environmentally friendly reputation.

H13: General environmentally friendly attitudes have a positive and significant relationship to the perceived level of organizational incentives offered to employees.

H14: General environmentally friendly attitudes have a positive and significant relationship to the perceived level of support offered to employees.

Behaviors: Recycling, Energy Savings, and Printing Reduction

Studies have used different approaches to examine types of behaviors and different measurements of behavior. Studies in the employee environmental literature have largely focused on waste management/recycling (Marans and Lee, 1993; Ludwig et

al., 1998; Tudor et al., 2007, 2008; McDonald, 2011), though studies have also examined climate control, lights, computer and printer use, private electric appliances, driving behavior, and energy use, to name a few (Siero et al., 1989; Scherbaum et al., 2008; Carrico and Riemer 2011; Lo et al. 2012b). In this study, we focus on three of the most commonly studied environmental behaviors in the workplace: recycling, energy savings, and printing reduction.

As noted previously, energy-related behavior accounts for 72% of all energy consumption in offices, and therefore any reduction in these behaviors could result in significant cost savings for the organization. These behaviors require both appropriate organizational infrastructure, to allow employees to engage in such activities (i.e., recycling bins placed on-site, ability to turn off equipment, and investment in devices, such as iPads, instead of printers), and employees' own motivation and initiative to engage. Thus, these specific pro-environmental behaviors are likely to be affected by both individual and organizational variables, the key focus of the study, even though differences may exist among other types of green behaviors, in terms of their antecedents (Vinning and Ebreo, 2002). Recycling, energy savings, and printing reduction are also unlikely to affect employees' work output, as opposed to other types of green behaviors (e.g., commuting-related green behaviors, such as using public transport, might affect the time employees arrive at work), and are independent or external to the organization's environment factors (e.g., commuting-related green behaviors are dependent on governmental funding).

Prior research has also been split on the study of actual behavior versus that of stated or reported behavior. Studies of actual behavior have included measurement of

waste bin analysis (Tudor et al., 2007, 2008), utility company data (i.e., gas and electricity; Shippee and Gregory, 1982), and gasoline consumption (Siero et al., 1989), among others. Studies of stated or reported environmental behavior have focused on both general reported environmental behavior (e.g., employees' environmentally responsible OCBs; Smith and O'Sullivan, 2012) and more specific behaviors (e.g., reported recycling; Scherbaum et al., 2008; McDonald, 2011).

Furthermore, the vast majority of studies have focused on a single behavior rather than multiple behaviors (though often closely aligned, such as recycling and waste management) in the workplace. Both the amount of the behavior (recycling most of the time vs. some of the time) and whether the behavior is being undertaken have been examined. Other studies have investigated the quality of a behavior—for example, correct recycling behavior (Humphrey et al., 1977). In general, studies have not examined whether one type of green behavior generalizes to others (e.g., whether recycling behavior generalizes to energy saving behavior), mainly because of the focus on single behavior types. From the limited studies that have examined this aspect, Vinning and Ebreo (2002) report mixed findings and suggest that one pro-environmental behavior may inhibit other types of pro-environmental behavior (see also Thogersen, 1999). In addition, Lee et al. (1995) find that recycling one material does not lead to other recycling and waste management behaviors. However, other studies report a spillover or carryover effect (Vinning and Ebreo, 2002) among types of pro-environmental behaviors (Reams et al., 1996). Regardless of these mixed results, we hypothesize the following:

> H15: Green behaviors, such as recycling, energy savings, and printing reduction, are positively and significantly related to one another.

Theoretical Model

Building on the aforementioned literature and the advanced hypotheses, we conceptualize a theoretical model (Figure 1) that links individual attitudinal and organizational variables, to predict employees' environmentally friendly behaviors. With organizations becoming more interested in motivating employees' green OCBs (i.e., as part of their CSR schemes), this conceptual framework is a first step toward identifying the antecedents of green behaviors within an organizational context. In turn, organizations can use this theoretical basis to assess employees' behaviors before designing environmentally friendly interventions in the workplace.

Insert Figure 1

Methodology

Data Collection

To accomplish the aims of this study and test the proposed theoretical model (Figure 1), quantitative data were drawn from seven different organizations in the United Kingdom by Global Action Plan, a leading U.K. environmental charity. Table 1 reports the details of these organizations, which vary in sector, type, and size. All the organizations use Global Action Plan's interventions to evaluate and motivate their employees' green behaviors.

Insert Table 1 about here

The data were collected before employees' exposure to Global Action Plan's interventions, for the purpose of evaluating the organizations' green behaviors before

they designed interventions. Data across the organizations were collected at approximately the same time through surveys, which were administered electronically through e-mails to all employees. All surveys were anonymous to encourage participation, reduce social desirability bias (Richman et al., 1999; Bradburn et al., 2004), and comply with ethical research conduct.

In total, 1204 employees across the seven organizations took part in the pre-intervention surveys. Although data from companies 6 and 7 are from the same organization, we treat them separately because they are from geographically distinct sites within the organization; as such, we expected that participants were exposed to different levels and types of support and management. These two sites are also significantly different in terms of size and type; one is a small head office with specialist staff, and the other is a larger general staff center. Finally, the data allowed us to examine individual and organizational variables and green behaviors across the different organizations (see Figure 1).

The questionnaires employed to collect the data for this study were not originally designed, which imposes limitations on the data set and the way we conducted the analyses. In addition, the data were not specifically tailored to academic research or primarily focused on the effects of individual and organizational variables on different environmental behaviors. Thus, this study should be treated as exploratory, and further research should aim to validate the proposed relationships with a more academically rigorous study design and data collection instrument. However, the generated data were rich, and the use of real data reduces some of the limitations of data sets collected primarily for academic research, including the lack of realism, artificiality, and the lack

of generalizability (see Schram, 2005; Levitt and List, 2007; Jiménez-Bued and Miller, 2010).

Survey Measures

The questionnaire consisted of 27 items. Table 2 shows the full statements used for each variable/construct measured in the study: general environmentally friendly attitudes, perceived incentives and support from an organization, importance of the organization's environmentally friendly reputation, perceived environmental behavior of the organization, and self-reported types of green behaviors (i.e., recycling, energy savings, and printing reduction). We measured some of the variables/constructs with single-item scales and others with multi-item scales. Although single-item scales are traditionally considered weaker than multi-item scales, there is increasing support in the fields of psychology and marketing for their use (see Hoeppner et al., 2011; Mende et al., 2013; Sauro, 2013). For example, in their study on the predictive validity of single- and multiple-item measures of attitude toward the advert and attitude toward the brand, Bergkvist and Rossiter (2007) find no difference in the validity of the two measures. In addition, in their study on the assessment of single-item measurements in management research, Fuchs and Diamantopoulos (2009, p. 206) conclude that the "application of single-item measures is appropriate under certain conditions and that their general banishment is not justified."

We measured all items and scales with Likert scales ranging from 1 (not at all; strongly disagree) to 7 (very; strongly agree). Unfortunately, no demographic variables were collected for the employees of each organization, which is a limitation of this study. Although demographic data would have benefited the analysis, the environmental

behavior literature reports mixed evidence on whether basic demographic variables (e.g., age, gender, education) play a significant role (Straughan and Roberts, 1999; Park et al., 2012).

Insert Table 2 about here

We calculated the Cronbach's alpha for each multi-item scale to establish its reliability by treating the data from the seven organizations as one. All multi-item scales had Cronbach's alphas equal to or greater than .70 (Fornell and Larcker, 1981). We also conducted exploratory factor analysis (using Varimax rotation) for each multi-item scale. Before this, we used the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy to assess the appropriateness of factor analysis. If variables share a common factor with other variables, their partial correlation will be small (ranging from 0 to .5), indicating the unique variance they share. All KMOs for each scale were between .5 and 1, indicating the appropriateness of a factor analysis. Next, we used Bartlett's test of sphericity to examine whether the items in each scale (i.e., general environmentally friendly attitudes scale) were uncorrelated in the population. The Bartlett's test of sphericity showed that the results for each scale were significant ($p \leq .001$) across all multi-item scales, indicating that the non-zero correlations in the sample matrix are due to sampling error. The change in eigenvalue represents the total variance explained by each factor, and the results indicated that the eigenvalues from the first to the second factor extracted for each scale were substantial, indicating a one-factor solution for each scale. Thus, we concluded that each multi-item measurement scale used in this research was both reliable and valid.

Analysis

The analysis explores the data from the seven organizations treated both comprehensively as one sample, to examine individual and organizational variables' impact on recycling, energy savings, printing reduction, and separately, to explore differences across organizations in terms of the sector, type, and size. To examine the hypotheses of the proposed theoretical model, we used a conservative statistical approach (we computed observed variables rather than their latent versions) in combination with a structural equation modeling (SEM) technique (rather than a simpler analysis technique; e.g., regressions). This analysis takes into account time-order effects for the individual and organizational variables identified in Figure 1. For example, employees' perceptions of the various incentives organizations use to motivate green behaviors affect organizations' environmentally friendly reputation, but such a reputation does not affect employees' behavior directly. Therefore, the use of a regression to test these variables' impact on behavior would greatly distort the results. Thus, we used the Mplus 7 software to run the conservative SEM analysis.

In addition, to compare the mean scores of the different types of environmentally friendly behaviors across the seven organizations, we used a series of one-way analyses of variance (ANOVAs). An ANOVA is a statistical method used to analyze the differences between several group means and variation among and between groups, while avoiding the inflation of type I errors (which would happen if multiple t-tests were used instead). Whether different interventions are required for each type of green behavior is therefore explored in this study. By treating the data from each organization as separate samples, we also compared individual, organizational variables, and green behaviors

across organizations to identify any significant differences (one-way ANOVA tests). Given that the target audiences of the interventions (employees in each organization) might vary in their attitudes, perceptions, and behaviors, this analysis can shed light on whether future interventions would require specifically tailored social marketing campaigns, designed separately for each organization's employees, rather than a one-size-fits-all intervention and theoretical model.

We also used a series of t-tests (a statistical method used to compare means of only two groups) and ANOVAs to compare differences across public and private organizations and across sectors. Given the disproportionate sample sizes, these results should be treated with caution. However, their contribution is important because this is one of the first studies to examine differences across organizations in terms of multiple environmentally friendly behaviors.

Results

Descriptive Statistics and Correlations

Table 3 shows the descriptive statistics for and correlations among all the variables/constructs. Of the types of environmental behaviors explored in this study, reported printing reduction was the highest (M = 3.69, SD = .96) and energy savings was the lowest (M = 3.20, SD = .92). Perceptions of the amount of incentives offered by organizations were also low (M = 2.32, SD = 1.10), while the importance of an organization's environmentally friendly reputation was high (M = 4.07, SD = .81). The perceived environmental behavior of the organization (M = 3.43, SD = .61), support from the organization (M = 3.53, SD = .88), and employees' general environmentally friendly

attitudes (M = 3.63, SD = .55) all had mean values that were slightly above average on a 5-point scale.

Insert Table 3 about here

None of the inter-correlations among the constructs were greater than .85 (Dijkstra et al., 1998), signifying discriminant validity. All significant correlations were between .08 and .48 and positive, with the highest one occurring between employees' general environmentally friendly attitudes and the importance of the organization's environmentally friendly reputation. The perceived environmental behavior of an organization had no significant relationship to employees' general environmentally friendly attitudes and printing reduction behavior.

Comparing Differences across Environmentally Friendly Behaviors

We computed one-way ANOVAs (see Table 4) to test whether significant differences existed among the three types of environmental behaviors. Before this, we used Levene's test to ensure that the homogeneity of variance assumption was not violated. Table 4 shows that there were significant differences among the mean scores of the green behaviors: energy savings and printing reduction, recycling and printing reduction, and recycling and energy savings (see the previous section and Table 3 for means and standard deviations).

Insert Table 4 about here

Comparing Differences across Organizations

For this analysis, we treated the data from each organization as separate samples. Levene's test showed that only printing reduction behaviors could be compared across the different organizations, given that the *p*-values for all other constructs were below .05. The one-way ANOVA revealed significant differences across the seven organizations in terms of employees' printing reduction behavior (see Table 5). Descriptive statistics for each organization in regard to printing reduction behaviors appear in Table 5, which also includes a breakdown of levels of printing reduction behaviors across organizations.

Insert Table 5 about here

In addition, we compared differences for all variables of the theoretical model, between private (n = 959, or 79.9% of the total sample) and public (n = 245, or 20.3% of the total sample) organizations, and between different sectors (financial: n = 389, or 32.3%; gas and electricity: n = 54, or 4.5%; telecommunications: n = 516, or 42.9%; and city council: n = 245, or 20.3%). The sample sizes were disproportionate, which is a limitation of this type of analysis. Table 6 (comparison of differences between private and public organizations) and Table 7 (comparison of differences across sectors) show the results of the t-tests and ANOVAs, respectively, for the variables for which the homogeneity of variance assumption was not violated.

Insert Table 6 and 7 about here

The perceived environmental behavior and incentives of public organizations were significantly lower than those of private organizations; conversely, employees' general environmental attitudes and energy saving behaviors were higher for public organizations than for private ones. No significant differences emerged between public and private organizations in employees' printing reduction behaviors. In addition, employees in the telecommunications sector reported significantly higher perceived importance of organization's environmentally friendly reputation, perceptions of incentives, and printing reduction behaviors than employees of other sectors. Employees in the financial sector reported the next-highest importance of organization's environmentally friendly reputation and incentives. However, these employees' printing reduction behaviors were the lowest among the sectors. Although these results might be affected by the unequal sample sizes, they provide useful findings that should be explored further. That is, they show important considerations regarding employees' environmentally friendly attitudes, perceptions, and behaviors across each organization, sector, and type of organizations (public vs. private).

In light of these results, we do not advance the model proposed here as a one-size-fits-all theoretical model; it also requires further validation and research. However, given that the samples for each organization did not have an adequate variable-to-sample ratio to run a multi-group SEM analysis, we explored one overall model to understand the impact of individual and organizational variables on different types of green behaviors. In doing so, we treated employees from each of the seven organizations as one sample.

Structural Equation Model Results

As noted previously, we conducted an SEM analysis with observed variables (composite scores of their latent equivalent for the multi-item scales) across employees of the seven organizations, to explore associations between individual and organizational variables in relation to types of green behaviors in the workplace. We computed the structural equation model, including inter-correlations among types of green behaviors, with Mplus 7. The hypothesized model revealed a statistically acceptable model fit (χ^2 = 24.06, df = 3, p = .00; RMSEA = .07, p = .05; CFI = .98; TLI = .82; SRMR = .02), even though the chi-square was significant. Chi-square values are sensitive to large sample sizes (Greenwood and Nikulin, 1996), which might explain the significant result for the chi-square test. All other model fit indices were within acceptable ranges, providing support that the individual and organizational variables could predict types of green behaviors.

The identified individual and organizational variables accounted for 10% of the variance in recycling behavior, 15% in energy saving behavior, and 5% in printing reduction behavior. Table 8 shows the results for the direct relationships of the hypothesized model tested, along with a summary of hypotheses support.

Insert Table 8 about here

General environmentally friendly attitudes had positive and significant relationships to all types of green behaviors (H1), while the perceived environmental behavior of an organization only had a positive and significant association with recycling behavior (H2a). Generally environmental friendly attitudes also had a positive

relationship to the importance of an organization's environmentally friendly reputation (H3) but a negative relationship to the perceived environmental behavior of an organization (H4), with both relationships being significant. The importance of an organization's environmentally friendly reputation and perceived incentives from an organization had positive and significant relationships to the perceived environmental behavior of an organization (H5 and H6, respectively). Perceptions of incentives from an organization had a positive and significant relationship to all types of green behaviors (H7), while perceptions of support from an organization only had positive and significant relationships to perceived environmental behavior of an organization (H8) and energy saving behavior (H9b). All other types of green behaviors (H9a and H9b) did not have significant relationships to perceptions of support. Perceptions of support and incentives were positively and significantly associated with each other (H10). Perceived incentives and support were also positively and significantly associated with the importance of an organization's environmentally friendly reputation (H11 and H12, respectively) and general environmentally friendly attitudes (H13 and H14, respectively). Last, the types of green behaviors had positive and significant relationships to one another (H15), except for the association between energy savings and printing reduction (H15c).

Thus, all hypotheses were fully supported, except for H2, H9, and H15, which were only partially supported. We discuss these results in the following section. In the Appendix, we present additional results of the indirect effects (mediating relationships illustrated in Figure 1) of the SEM analysis.

Discussion

Individual and Organizational Variables Predicting Green Behaviors

According to the SEM results, the hypothesized model predicts employees' environmental behaviors well, but the percentage of variance accounted for by the organizational and individual variables identified in the hypothesized model differs depending on the type of elicited environmentally friendly behavior. The hypothesized model accounted for a greater amount of variance in energy saving behaviors, followed by recycling and printing reduction behaviors. Printing reduction behaviors had the lowest amount of variance explained, which might be due to this activity being a necessity for some employees in their jobs or because it is a deep-rooted habit.

The direct relationships tested show that 12 of the 15 proposed hypotheses received supported, indicating that both the individual and organizational variables affect green behaviors in the workplace. Given our use of the observed variables of the constructs for the SEM analysis and our treatment of the data as one sample, these results should be interpreted with caution, and further research is warranted for their validation. However, these results offer new findings on important aspects that organizations should consider when implementing successful interventions to motivate environmentally friendly behaviors among employees.

General environmentally friendly attitudes have a positive and significant relationship to all green behavior types, indicating that individual attitudes and behaviors are significantly associated. This provides support for the findings in prior literature (Marans and Lee, 1993; Kearney and De Young, 1996; Tudor et al., 2007, 2008; Robertson and Barling, 2013).

The more favorable employees' general environmentally friendly attitudes, the higher is the perceived importance of an organization's environmental friendly reputation, the higher are perceptions of incentives and support from an organization, and the lower is the perceived environmental behavior of an organization. These findings suggest that more environmentally friendly employees are more likely to be harsher critics of an organization's green behaviors, to attribute a greater degree of importance to its environmentally friendly reputation, and to have more favorable perceptions of incentives and support from the organization. This is in line with research on person–organization fit that highlights the important role of value congruence (Kristoff, 1996) between the person and the organization on employees' attitudes toward and perceptions of the organization (Ambrose et al., 2008; Hudson and Bryson, 2009). In addition, Cable and DeRue (2002) note the positive relationship between person–fit perceptions, perceived organizational support, and citizenship behaviors, all of which are pertinent for this study. Therefore, organizations should monitor their employees' environmentally friendly attitudes to ensure that they are in line with those of the organization because this is likely to generate greater commitment to environmental programs.

Similarly, perceived incentives from an organization also positively affect all three types of green behaviors. In contrast, organizational support and environmental behavior of an organization do not equally affect each type of behavior. Although prior research suggests that incentives and support do affect green behaviors (Grensing-Pophal, 1993; Kearney and De Young, 1996; Ramus and Steger, 2000; Tudor et al., 2008; Smith and O'Sullivan, 2012), it has not simultaneously tested for these relationships across different types of green behaviors; rather, these studies have examined the relationships

between incentives/support and a measure of general environmentally friendly behaviors or a single environmental behavior. However, the findings do lend support to the limited research that has examined different types of green behaviors in the household, in terms of their antecedents (McKenzie-Mohr et al., 1995).

Recycling and printing reduction behaviors were not affected by perceived organizational support, while the perceived environmental behavior of an organization did not affect energy saving and printing reduction behaviors, which might be due to the limited facilities or control offered to employees to carry out these behaviors. This is also evident in some open-ended comments by employees: "*There are almost non-existent recycling facilities or guidance in the office*"; "*It's important to establish who is responsible in the workplace for things like office equipment, heating and A/C. There are 45 of us working in an area, we should have the ability to change the heat settings and we can't turn off lights*" (employee A[2]); "*Double sided printing should be standard; this can be done simply by IT. Separate departments should be charged for printing costs to make them aware how much they are printing*" (employee B).

Printing reduction behavior was only positively related to perceived incentives from an organization. Comments such as "*Staff should bring laptops and tablets into meetings rather than printing out reams of paper which are always put in the bin the minute the meeting finishes*" (employee C), and "*Senior managers need to take a lead on reducing the amount of printed paper that is wasted*" (employee D) show that organizations should encourage employees to engage in printing reduction behaviors, and according to our results, incentives can greatly help in this endeavor. Incentives can also

[2] Given that no demographic information was collected, the authors cannot provide the age, gender or specific job title of the employees who provided these comments.

help encourage recycling and energy saving behaviors. The organization's own environmental behaviors can encourage recycling behaviors, while organizational support can lead to energy saving behaviors.

Moreover, incentives positively and significantly affected the perceived level of support given to employees. In turn, both perceived support and incentives were positively and significantly associated with the perceived environmental behavior of an organization and the importance of an organization's environmentally friendly reputation. Furthermore, a higher level of importance to an organization's environmentally friendly reputation also corresponded to higher levels of perceived environmental friendly organizational behavior. These results support prior literature in terms of the relationship between perceived organizational behavior and support/incentives (Ramus and Steger, 2000) and show that the more organizations give incentives and support to employees, the more importance employees place on the organization's environmentally friendly reputation. Thus, this finding implies that organizations, through incentives and support, can shape employees' perceptions of the importance of their environmentally friendly reputation.

In addition, preliminary analysis (Table 3) shows that employees reported a high perceived importance of an organization's environmentally friendly reputation and a low perceived amount of incentives to encourage environmental behaviors. This suggests that organizations are not providing enough incentives to elicit green behaviors, which in turn might affect employees' satisfaction with the organization, given the amount of importance they place on the organization's reputation. However, the high perceived importance of an organization's environmentally friendly reputation might also be due to

respondent bias (as is the case with all self-reported data); the employees might have wanted to be viewed as people who care about the reputation of their organization.

Last, in line with prior research noting that each type of green behavior may be associated with other types of green behaviors (Lee et al., 1995; Reams et al., 1996), only some behaviors were significantly associated with one another. Recycling behaviors were positively and significantly associated with both energy saving and printing reduction behaviors. However, printing reduction behaviors were not associated with energy saving behaviors. Therefore, employers need to be careful in designing interventions that engage in one type of green behavior if they want these interventions to spill over to other green behaviors.

Differences across Types of Green Behaviors

Regarding types of environmental behaviors, we found that printing reduction behaviors were significantly higher than recycling and energy saving behaviors. Therefore, organizations should focus interventions first on motivating energy saving behaviors and then on recycling behaviors. Printing reduction behaviors have minimal, if any, implications for employees' work/output. Employees can also exert greater control over printing reduction behaviors, given that they are independent of the organizational support given to employees for other types of environmental behaviors. For example, recycling behaviors can be dependent on whether recycling bins are provided in the workplace (Brothers et al., 1994; Ludwig et al., 1998), and energy saving behaviors are dependent on whether employees have the ability to control their energy consumption (e.g., lights, heating).

Differences across Organization Surveyed, Organization Types, and Sectors

Regarding the individual, organizational, and behavioral variables included in the advanced theoretical model, we could examine only differences in one type of green behaviors across organizations (i.e., printing reduction behavior) because it was the only variable that did not violate the homogeneity of variance assumption. The means that printing reduction behavior varied significantly across the surveyed organizations (see Table 5), which might be due to differences in organizational culture.

A noteworthy pattern emerged when we compared differences in printing reduction behaviors across sectors. Of the seven organizations, the two telecommunications companies reported significantly higher recycling behaviors (see Tables 5 and 7). Conversely, printing reduction behaviors in the financial sector were the lowest. We found no significant differences between public and private organizations in this regard.

A reason for the higher recycling behaviors in the telecommunications organizations could be that these companies give a greater level of importance to their employees' environmental behaviors and therefore provide more incentives or expose employees to more environmental interventions than the other organizations. The finding that the telecommunications sector had significantly higher perceptions of incentives also lends support to this. However, financial sector employees reported the second-highest perceptions of incentives. Therefore, these differences might also be due to employees' attitudinal differences, which we could not examine.

Both the telecommunications and the financial sector also had significantly higher perceived importance of the organization's environmentally friendly reputation than other

sectors. Given that a telecommunications organization, for example, is likely more lucrative than a city council, employees of the telecommunications organization also would be more likely to place a higher level of importance on its environmentally friendly reputation, to balance perceptions of profit making versus societal benefits.

Last, the results suggest that, according to employees' perceptions, public organizations have significantly lower environmental behavior and offer fewer incentives than private organizations. Conversely, employees' general environmental attitudes and energy saving behaviors are greater in public than private organizations. This is logical because private companies may have more available resources and thus be able to carry out a greater number of pro-environmental initiatives (by offering incentives or providing appropriate infrastructure) than public companies. Another explanation could be that public organizations have less financial resources to spend on their operations, and thus they try to decrease spending in areas such as electricity use and so on.

Managerial Implications

The results suggest that the organizational and individual variables we explored herein largely affect green behaviors differently. Only employees' general environmentally friendly attitudes and perceived incentives from the organization had positive relationships to all the green behaviors. In addition, not all green behaviors generalized to other green behaviors (i.e., energy saving and printing reduction behaviors). We also found significant differences across types, size, and sectors of organizations (i.e., for printing reduction behaviors). These differences might hinder the use of one intervention to motivate multiple environmentally friendly behaviors across all organizations. Therefore, creation of separate interventions for each type of

environmental behavior and each sector and type (private vs. public) of organization is required.

Specifically, mangers should focus most on motivating energy saving behaviors, which were the lowest of the other green behaviors across organizations. The use of e-mails and e-newsletters to disseminate the organization's environmentally friendly behavior outputs could help motivate employees to engage in such behaviors.

Interventions, such as "green employee of the month" competitions, could also help motivate recycling, printing reduction, and energy saving behaviors. The use of eco-champions who facilitate communication between the organization and employees could also be explored further. Battacharya et al. (2008) highlight the importance of communicating CSR programs in a concrete, coherent, and consistent manner and putting CSR decisions in the hands of employees.

Organizational culture might also be important for printing reduction behaviors, and managers could ensure that employee tasks are carried out with less printing (i.e., providing tablets, having projectors in meetings where the material can be visible by all employees). Managers should also consider the fit between employees' values and expectations and those of the organization in terms of person–organization value congruence. As noted, both the person–organization fit and CSR literature streams propose potential outcomes such as improved reputation, increased loyalty, competitive advantage, financial improvement (Aguinis and Glavas, 2012), and enhanced engagement in OCBs (Cable and DeRue, 2002) from the successful introduction of CSR initiatives and good person–organization fit.

Private companies should also provide more incentives and support for green behaviors because the importance of their reputation is more important to employees (who could also be potential customers) than employees of public organizations. In addition, these employees are harsher critics of their organizations' green behaviors, most likely because private companies have greater disposable incomes and resources than public companies.

Conclusions, Limitations, and Further Research

This study's results and implications should be taken with caution. As mentioned, this is an exploratory study, which requires further validation of the proposed and tested relationships. We compared the variables and behaviors across several organizations belonging to different sectors, finding differences in employee attitudes, perceptions, and behaviors. Moreover, we examined the impact of both individual attitudinal and organizational variables on different types of green behaviors simultaneously. Organizations' environmentally friendly endeavors at an industry level have possible societal and governmental implications; for example, government funding could be distributed to encourage green behaviors of employees of public organizations. The findings are particularly notable compared with the work on person–organization fit, which has found no difference between person–organization value congruence across non-profit and for-profit organizations (Ren, 2013). Qualitative research could provide tailored recommendations to organizations about specific methods of motivating green behaviors.

Although we established that single-item scales have gained support in the literature (Bergkvist and Rossiter, 2007; Fuchs and Diamantopoulos, 2009; Hoeppner et al., 2011; Mende et al., 2013; Sauro, 2013), further research could use established multi-item scales and compare these with the single-item measures used herein. Research could also measure additional individual and organizational variables that might affect green behaviors. Table 9 offers a list of suggestions of the potential variables and measurements that could be used by future studies in this area and to collect data in a more academically rigorous way.

Insert Table 9 about here

In addition, further research could include more objective measures of organizational behavior, such as a measurement of money spent on initiatives or number and type of initiatives. Research should also consider the methodological developments in the person–organization fit literature, which suggest the need for both direct and indirect measurement (Kristoff, 1996).

Research should also aim to use actual behavior rather than reported behavior. Established scales from the literature and an adequate sample-to-item ratio could advance knowledge in this area, because it would be possible to run an SEM analysis with latent variables (instead of composite scores). Further research should also explore further differences across organizations, by using balanced sample sizes, with a random sampling technique employed within each organization, and running a multi-group SEM analysis, to compare the hypothesized model across different companies, sectors, and industries.

In addition, the data did not contain any demographic variables, which prevented us from exploring differences across employees. However, prior research suggests that gender and age differences affect environmental attitudes (Wehrmeyer and McNeil, 2000), though there is also much debate about the relevance of demographic variables (Posner, 1992; Straughan and Roberts, 1999; Park et al., 2012). The length of service to an organization or position in the organization hierarchy (Wehrmeyer and McNeil, 2000) also might affect employees' attitudes, behaviors, and perceptions of organizations' level of greenness, though this has received mixed results in the person–organization fit literature (Posner, 1992; Kristoff, 1996).

This study only used data from employees across organizations, before employees were exposed to an intervention. A pre-and post- intervention survey, including the variables of the hypothesized model, could show whether or not the interventions were successful, by comparing the before and after measures, as well as, the hypothesized model before and after the intervention, with a multi-group SEM analysis.

Last, other types of green behaviors, such as commuting-related environmentally friendly behaviors, should also be compared with recycling, energy saving, and printing reduction behaviors, to uncover similarities and differences among them. In general, prior research has examined commuting behavior separately from other employee environmental behaviors (Lo et al., 2012a), perhaps because this occurs outside the work environment and does not often affect the organization financially.

In conclusion, this article responds to calls for further research on individual-level responses to CSR initiatives (Aguinis and Glavas, 2012) and the influence of both individual attitudinal and organizational variables on employees' environmentally

friendly behaviors (Lo et al., 2012a). The study sheds light on the influence of these variables on three types of environmentally friendly behaviors—namely, recycling, energy saving, and printing reduction behaviors—simultaneously across seven organizations. We encourage further research to consider the theoretical and practical implications stemming from this study to advance knowledge and recommendations in this area.

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List of Figures, Tables, and Appendix

Figure 1: The impact of individual and organizational variables on different types of environmentally friendly behaviors among employees

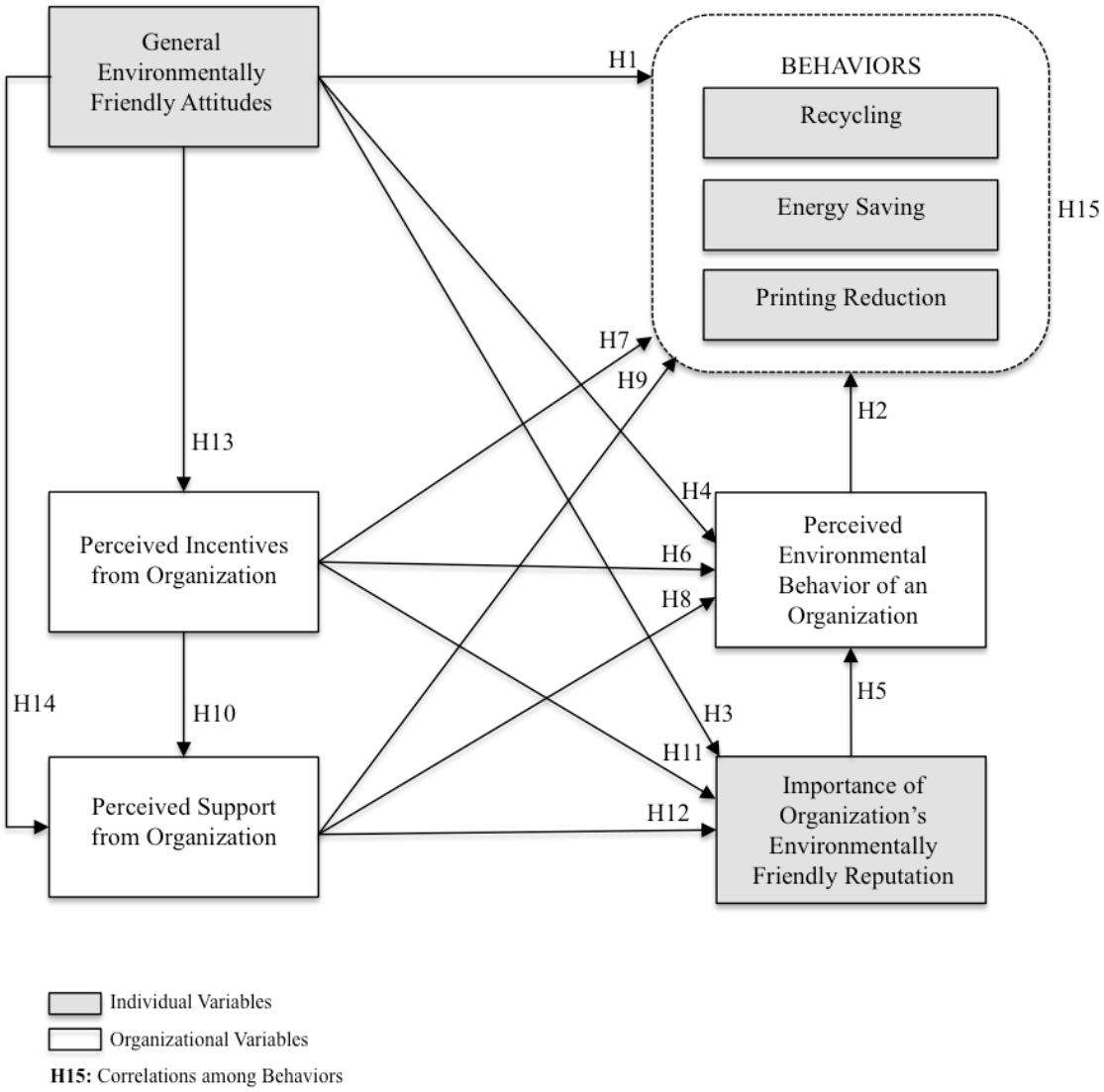

Table 1: Sectors, types, sizes of organizations, and sample sizes

Name	Sector of Organizations	Type of Organizations	Size of Organizations (# of employees)	Employees at the sites during data collection	Sample Size n	Sample Size % across organizations
Company 1	Telecommunications	Private	8,213	522	460	38.2%
Company 2	Gas and Electricity	Private	2859	85	54	4.5%
Company 3	Financial	Private	6,000	300	161	13.4%
Company 4	City Council	Public	2,129	2,129	245	20.3%
Company 5	Telecommunications	Private	12,000	1,000	56	4.7%
Company 6	Financial	Private	4,000	2,981	142	11.8%
Company 7	Financial	Private	4,000	357	86	7.1%
Total	-	-	-	-	**1204**	100%

Table 2: Variables, measures, and Cronbach's alphas, among all employees

Variable/Construct	*Scale Items*	*Reverse Coded*	*Cronbach's Alpha*
Perceived Environmental Behavior of an Organization	Please indicate how "green" (environmentally friendly) the (organization's name) is compared to what it could be.		n/a
Importance of Organization's Environmentally Friendly Reputation	How important is it for you to work for an organization that has a good reputation for environmental responsibility?		n/a
Perceived Incentives from Organization	Does the (organization's name) incentivize/reward environmentally friendly behavior?		n/a
Perceived Support from Organization	How much support do employees receive from the (organization's name) to work in an environmentally friendly way?		n/a
General Environmentally Friendly Attitudes	The effects of climate change are too far in the future to really worry me.	**Yes**	**a=.84**
	I don't pay much attention to the amount of water I use at home.	**Yes**	
	It's not worth me doing things to help the environment if others don't do.	**Yes**	
	It's only worth doing environmentally friendly things if they save you money.	**Yes**	
	It's not worth Britain trying to combat climate change because other countries will just cancel out what we do.	**Yes**	
	I don't really give much thought to saving energy in my home.	**Yes**	
	The environment is a low priority for me compared with a lot of other things in my life.	**Yes**	
	It takes too much effort to do things that are environmentally friendly.	**Yes**	
Recycling Behavior	I put the following in separate recycling/compost bins: paper		**a=.75**
	I put the following in separate recycling/compost bins: cardboard		
	I put the following in separate recycling/compost bins: cans		
	I put the following in separate recycling/compost bins: plastic cups/bottles		
	I put the following in separate recycling/compost bins: glass		
	I put the following in separate recycling/compost bins: toner		
	I put the following in separate recycling/compost bins: batteries		
Energy Saving Behavior	I turn off office equipment when not in use, especially overnight (e.g., photocopiers, printers etc).		**a=.70**
	I leave the computer on even when not in use for over 30 minutes.	Yes	
	I switch off lights when not needed.		
	I add or remove clothing rather than turning heating or air conditioning up when it's hot or cold.		
	I open or close windows rather than turning heating or air conditioning up when it's hot or cold.		
	I turn heating or air conditioning down if I can find other ways to remain comfortable.		
Printing Reduction Behavior	I tend to print emails for ease of reference.	Yes	n/a

Table 3: Descriptive statistics and correlations, among all employees

Variable Name	M (SD)	Min-Max	N	Correlations							
Perceived Environmental Behavior of an Organization	3.43 (.61)	1-5	1173	1							
Importance of an Organization's Environmentally Friendly Reputation	4.07 (.81)	2-5	1177	.14**	1						
Perceived Incentives from Organization	2.32 (1.10)	1-5	1172	.20**	.14**	1					
Perceived Support from Organization	3.53 (.88)	1-5	1170	.41**	.18**	.29**	1				
General Environmentally Friendly Attitudes	3.63 (.55)	1-5	1185	.02	.48**	.10**	.13**	1			
Recycling Behavior	3.63 (.91)	1-5	1043	.13**	.23**	.12**	.10**	.28**	1		
Energy Saving Behavior	3.20 (.92)	1-5	1033	.12**	.29**	.19**	.17**	.34**	.31**	1	
Printing Reduction Behavior	3.69 (.96)	1-5	1165	.06	.15**	.11**	.08**	.19**	.13**	.13**	1

**$p \leq .01$; *$p \leq .05$

Table 4: ANOVA results indicating differences between types of environmental Behaviors, among all employees

Mean Comparisons of Types of Environmental Behaviors		**Sum of Squares**	**df**	**Mean Squares**	**F**	**Sig.**
Energy-saving and Printing Reduction	Between Groups	14.96	4	3.74	4.47	.00
	Within Groups	857.23	1026	.84		
	Total	872.18	1030			
Recycling and Printing Reduction	Between Groups	16.42	4	4.11	5.08	.00
	Within Groups	837.71	1036	.81		
	Total	854.13	1040			
Recycling and Energy-saving	Between Groups	93.49	24	3.89	5.22	.00
	Within Groups	725.16	972	.75		
	Total	818.65	996			

Table 5: ANOVA and descriptive statistics for printing reduction behaviors, illustrating significant differences across organizations

		Sum of Squares	**df**	**Mean Squares**	**F**	**Sig.**
ANOVA results	Between Groups	57.34	6	9.56	10.97	.00
	Within Groups	1008.93	1158	.87		
	Total	1066.27	1164			
Descriptive Statistics for Each Organization			**N**	**M (SD)**	**Min-Max**	
Company 1			457	3.90 (.92)	1-5	
Company 2			51	3.67 (.82)	2-5	
Company 3			146	3.59 (.87)	1-5	
Company 4			237	3.68 (.99)	1-5	
Company 5			52	3.80 (1.01)	1-5	
Company 6			139	3.28 (.92)	1-5	
Company 7			83	3.31 (.94)	1-5	
Cross-tabulation of Levels of Printing Reduction Behaviors by Organization			**(n) Low Printing Reduction Behaviors**	**(n) Average Printing Reduction Behaviors**	**(n) High Printing Reduction Behaviors**	
Company 1			29	116	312	
Company 2			4	16	31	
Company 3			14	53	79	
Company 4			26	74	137	
Company 5			6	11	35	
Company 6			20	67	52	
Company 7			15	33	35	
Total			114	370	681	

Table 6: Comparison of differences between private and public organizations, for the variables for which the homogeneity of variance assumption was not violated

	Levene's test		t-test			Descriptive Statistics				
Construct	**F**	**Sig.**	**t**	**df**	**Sig.**		**N**	**Mean**	**Std. Deviation**	**Std. Error**
Perceived Environmental Behavior of an Organization	.07	.79	-5.21	1171	.00	*Public*	240	3.25	.66	.04
						Private	933	3.48	.58	.01
Perceived Incentives from Organization	1.65	.20	-2.03	1170	.04	*Public*	240	2.20	1.06	.06
						Private	932	2.36	1.08	.03
General Environmentally Friendly Attitudes	.09	.77	4.67	1183	.00	*Public*	245	3.78	.56	.03
						Private	940	3.59	.54	.01
Energy Saving Behavior	.44	.51	4.23	1031	.00	*Public*	221	3.42	.87	.05
						Private	812	3.13	.92	.03
Printing Reduction Behavior	1.13	.29	.00	1163	.99	*Public*	237	3.68	.98	.06
						Private	928	3.68	.94	.03

Table 7: Comparison of differences across sectors, for the variables for which the homogeneity of variance assumption was not violated

Construct	Levene Statistic	df1	df2	Sig.		Sum of Squares	df	Mean Square	F	Sig.
Importance of Organization Env. Friendly Reputation	2.12	3	1173	.09	Between	21.01	3	7.00	11.07	.00
					Within	741.82	1173	.63		
					Total	762.83	1176			
Perceived Incentives from Organization	.63	3	1168	.59	Between	24.77	3	8.25	7.14	.00
					Within	1351.31	1168	1.16		
					Total	1376.08	1171			
Printing Reduction Behavior	2.31	3	1161	.07	Between	49.16	3	16.38	18.71	.00
					Within	1017.11	1161	.87		
					Total	1066.27	1164			

Construct	Sector	N	Mean	SD	Std. Error
Importance of Organization Env. Friendly Reputation	Telecommunications	511	4.20	.72	.03
	Financial	373	3.89	.81	.04
	Gas and Electricity	52	4.08	.78	.11
	Council	241	4.04	.91	.06
	Total	1177	4.07	.80	.02
Perceived Incentives from Organization	Telecommunications	510	2.48	1.08	.05
	Financial	371	2.22	1.05	.05
	Gas and Electricity	51	2.06	1.19	.16
	Council	240	2.20	1.06	.06
	Total	1172	2.32	1.08	.032
Printing Reduction Behavior	Telecommunications	509	3.89	.93	.04
	Financial	368	3.41	.91	.04
	Gas and Electricity	51	3.66	.81	.11
	Council	237	3.68	.98	.06
	Total	1165	3.68	.95	.03

Table 8: Structural equation model results of direct effects

Hypothesized Relationships	**Std. Loadings**	**S.E.**	**z-scores**	**Hypothesis Supported?**
H1a: General Environmentally Friendly Attitudes →Recycling Behavior	.27**	.03	9.50	Yes
H1b: General Environmentally Friendly Attitudes →Energy Saving Behavior	.31**	.03	11.16	Yes
H1c: General Environmentally Friendly Attitudes →Printing Reduction Behavior	.18**	.03	6.28	Yes
H2a: Perceived Environmental Behavior of Organization → Recycling Behavior	.11**	.03	3.30	Yes
H2b: Perceived Environmental Behavior of Organization →Energy Saving Behavior	.05	.03	1.66	No
H2c: Perceived Environmental Behavior of Organization → Printing Reduction Behavior	.02	.03	.76	No
H3: General Environmentally Friendly Attitudes → Importance of Organization's Environmentally Friendly Reputation	.46**	.02	20.19	Yes
H4: General Environmentally Friendly Attitudes → Perceived Environmental Behavior of Organization	-.08**	.03	-2.59	Yes
H5: Importance of Organization's Environmentally Friendly Reputation → Perceived Environmental Behavior of Organization	.10**	.03	3.14	Yes
H6: Perceived Incentives from Organization → Perceived Environmental Behavior of Organization	.08**	.03	3.05	Yes
H7a: Perceived Incentives from Organization → Recycling Behavior	.07*	.03	2.44	Yes
H7b: Perceived Incentives from Organization → Energy Saving Behavior	.13**	.03	4.14	Yes
H7c: Perceived Incentives from Organization →Printing Reduction Behavior	.07*	.03	2.43	Yes
H8: Perceived Support from Organization → Perceived Environmental Behavior of Organization	.39**	.03	14.73	Yes
H9a: Perceived Support from Organization →Recycling Behavior	-.01	.03	-.10	No
H9b: Perceived Support from Organization →Energy Saving Behavior	.07*	.03	2.24	Yes
H9c: Perceived Support from Organization →Printing Reduction Behavior	.03	.03	.95	No
H10: Perceived Incentives from Organization →Perceived Support from Organization	.29**	.03	10.58	Yes
H11: Perceived Incentives from Organization → Importance of Organization's Environmentally Friendly Reputation	.06*	.03	2.35	Yes
H12: Perceived Support from Organization → Importance of Organization's Environmentally Friendly Reputation	.10**	.03	3.64	Yes
H13: General Environmentally Friendly Attitudes → Perceived Incentives from Organization	.10**	.03	3.62	Yes
H14: General Environmentally Friendly Attitudes → Perceived Support from Organization	.10**	.03	3.49	Yes
H15a: Recycling Behavior ←→ Energy Saving Behavior	.21**	.03	7.10	Yes
H15b: Recycling Behavior ←→Printing Reduction Behavior	.07*	.03	2.36	Yes
H15c: Energy Saving Behavior ←→Printing Reduction Behavior	.05	.03	1.63	No

**$p \leq .01$; *$p \leq .05$

Table 9: Suggested constructs and measurements for further research

Constructs/Variables	**Definition**	**Individual or Organizational**	**Measurement/Scale**
Pro-Environmental Self-Efficacy	Ability of individual to engage in green behaviors	Individual	Witte (1992)
Organizational Culture	The pattern of shared values and beliefs that help individuals understand organizational functioning and thus provide them with the norms for behavior in the organization.	Organizational	Deshpandé et al. (1993)
Personal Environmental Attitudes	Attitudes with four factors identified: Conscientious Activism, Corporate Environmentalism, Deep Green and Technological Omnipotence	Individual	Wehrmeyer and McNeil (2000)
Environmental Personal Norms	How important environmental issues are to the individual	Individual	Scherbaum et al. (2008)
Descriptive Norm	How many people individuals believe recycle etc. in their workplace	Individual	Carrico and Riemer (2011)
Injunctive Norm	Assessing people's reactions to pro- or anti-environmental behavior in the workplace	Individual	Carrico and Riemer (2011)
Employee Commitment	An emotional attachment to, identification with, and Involvement in the organization.	Individual	Allen and Meyer (1990); Kim et al. (2010)
Organizational Commitment	How committed the organization is to pro-environmental behaviors	Organizational	Lee et al. (1995)
Corporate Commitment to Sustainability	How committed management is to sustainability within the workplace.	Organizational	Ramus and Steger 2000

Appendix: Structural equation model results of indirect effects

Although the proposed theoretical model did not hypothesize any mediating relationships, due to the lack of prior literature in this area, the structural equation modeling technique used to analyze the hypothesized (direct) relationships also allowed for the exploration of the mediating roles of perceived incentives and support from an organization, the importance of an organization's environmentally friendly reputation, and the perceived environmental behavior of an organization. The results of the indirect effects appear in Table A1, which also summarizes the type of mediating relationships identified.

In short, perceived incentives from an organization partially mediate the relationships between (1) general environmentally friendly attitudes and perceived organizational support, (2) general environmentally friendly attitudes and energy saving behaviors, (3) general environmentally friendly attitudes and printing reduction behaviors, and (4) general environmentally friendly attitudes and importance of an organization's environmentally friendly reputation. They also act as an inconsistent mediator for general environmentally friendly attitudes and perceived environmental behavior of the organization.

Perceived support from an organization also partially mediates the relationships between (1) general environmentally friendly attitudes and energy saving behaviors, (2) general environmentally friendly attitudes and importance of an organization's environmentally friendly reputation, (3) perceived incentives from the organization and energy saving behaviors, (4) perceived incentives from the organization and importance of an organization's environmentally friendly reputation, (5) perceived incentives from

the organization and perceived environmental behavior of the organization, and (6) perceived incentives from the organization and printing reduction behaviors. It also acts as an inconsistent mediator for (7) general environmentally friendly attitudes and perceived environmental behavior of the organization.

The importance of an organization's environmentally friendly reputation partially mediates the relationship between (1) perceived organizational support and perceived environmental behavior of the organization; however, it acts as an inconsistent mediator between (2) general environmentally friendly attitudes and perceived environmental behavior of the organization.

Last, perceived environmental behavior of the organization fully mediates the relationship between (1) perceived organizational support and recycling behavior, partially mediates the relationship between (2) perceived incentives from the organization and recycling behavior, and acts as an inconsistent mediator between (3) general environmentally friendly attitudes and recycling behavior.

Table A1: Structural equation model results of indirect effects

Mediating Relationships Not Hypothesized	**Std. Loadings**	**S.E.**	**z-scores**	**Mediation?**
Perceived Incentives from Organization as a Mediator				
General Environmentally friendly Attitudes → Perceived Incentives from Organization → Perceived Environmental Behavior of Organization	.01*	.01	2.32	Inconsistent
General Environmentally friendly Attitudes → Perceived Incentives from Organization → Perceived Support from Organization	.03**	.01	3.42	Partial
General Environmentally friendly Attitudes → Perceived Incentives from Organization → Importance of Organization's Environmentally friendly Reputation	.01*	.00	1.97	Partial
General Environmentally friendly Attitudes → Perceived Incentives from Organization → Recycling Behaviors	.01	.00	1.90	No
General Environmentally friendly Attitudes → Perceived Incentives from Organization → Energy Saving Behaviors	.01**	.00	2.73	Partial
General Environmentally friendly Attitudes → Perceived Incentives from Organization → Printing Reduction Behavior	.01*	.00	2.01	Partial
Perceived Support from Organization as a Mediator				
General Environmentally friendly Attitudes → Perceived Support from Organization → Perceived Environmental Behavior of Organization	.04**	.01	2.38	Inconsistent
General Environmentally friendly Attitudes → Perceived Support from Organization → Importance of Organization's Environmentally friendly Reputation	.01*	.00	2.51	Partial
General Environmentally friendly Attitudes → Perceived Support from Organization → Recycling Behaviors	.00	.00	-.02	No
General Environmentally friendly Attitudes → Perceived Support from Organization → Energy Saving Behaviors	.01**	.00	1.88	Partial
General Environmentally friendly Attitudes → Perceived Support from Organization → Printing Reduction Behavior	.00	.00	.91	No
Perceived Incentives from Organization → Perceived Support from Organization → Perceived Environmental Behavior of Organization	.11**	.01	8.45	Partial
Perceived Incentives from Organization → Perceived Support from Organization → Importance of Organization's Environmentally friendly Reputation	.03**	.01	3.43	Partial
Perceived Incentives from Organization → Perceived Support from Organization → Recycling Behavior	.00	.01	-.09	No
Perceived Incentives from Organization → Perceived Support from Organization → Energy Saving Behavior	.02*	.01	2.19	Partial
Perceived Incentives from Organization → Perceived Support from Organization → Printing Reduction Behavior	.01	.00	.94	No
Importance of Organization's Environmentally friendly Reputation as a Mediator				
General Environmentally friendly Attitudes → Importance of Organization's Environmentally friendly Reputation → Perceived Environmental Behavior of Organization	.04**	.01	3.09	Inconsistent
Perceived Incentives from Organization → Importance of Organization's Environmentally friendly Reputation → Perceived Environmental Behavior of Organization	.01	.01	1.88	No
Perceived Support from Organization → Importance of Organization's Environmentally friendly Reputation → Perceived Environmental Behavior of Organization	.01*	.00	2.37	Partial
Perceived Environmental Behavior of Organization as a Mediator				
General Environmentally friendly Attitudes → Perceived Environmental Behavior of Organization → Recycling Behaviors	-.01*	.00	-2.05	Inconsistent
General Environmentally friendly Attitudes → Perceived Environmental Behavior of Organization → Energy Saving Behaviors	.00	.00	-1.40	No
General Environmentally friendly Attitudes → Perceived Environmental Behavior of Organization → Printing Reduction Behavior	.00	.00	-.73	No
Perceived Incentives from Organization → Perceived Environmental Behavior of	.01*	.00	2.23	Partial

Organization → Recycling Behaviors				
Perceived Incentives from Organization → Perceived Environmental Behavior of Organization → Energy Saving Behavior	.00	.00	1.46	No
Perceived Incentives from Organization → Perceived Environmental Behavior of Organization → Printing Reduction Behavior	.00	.00	.74	No
Perceived Support from Organization → Perceived Environmental Behavior of Organization → Recycling Behaviors	.04**	.01	3.20	Full
Perceived Support from Organization → Perceived Environmental Behavior of Organization → Energy Saving Behavior	.02	.01	1.65	No
Perceived Support from Organization → Perceived Environmental Behavior of Organization → Printing Reduction Behavior	.01	.01	.76	No

**$p \leq .01$; *$p \leq .05$