


Employee energy benefits: what are they and what effects do they have on employees?

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Received: 6 January 2017 / Accepted: 29 July 2018
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Abstract Employee energy benefits (EEBs), such as subsidies for employee home energy audits and financial incentives for carpooling to work, aim to influence employees' environmental behaviors outside of work. Exploring these understudied benefits would offer new insights that can enrich theories of employer and employee motivations for engaging in environmental behavior, as well as reveal new strategies for making significant progress on environment goals. By drawing upon employer reports and conducting a survey of 482 US adults employed full-time, we found that there are a wide range of types of EEBs currently offered by employers, and furthermore, they were more likely to be offered in certain industries, such as state and local governments but not others such as retail. These benefits were offered to 17% of employees and included a vast array of strategies and approaches. Guided by theorizing on employer and employee motivation, open-ended responses suggested employers were perceived to offer EEBs to maximize competitiveness and because of social responsibility concerns, and employees tended to enroll because they wanted to save money and time or because they cared about the environment. Finally, EEBs were linked to employee environmental behavior and morale. The findings reveal new information about the types of EEBs being offered, motivations for offering and

enrolling in EEBs, and their relationship to employee behavior and morale. This work suggests numerous lines of promising new research.

Keywords Environmental behavior · Employee benefits · Person-organization fit · Motivation · Morale

Introduction

Organizations have increasingly focused on employee energy and environmental behaviors as part of their corporate environmental strategies (Bansal and Roth 2000; Shrivastava 1995; Starik and Marcus 2000). Although most of this attention is focused on employee behavior in the workplace, a relatively new type of organizational effort aims to influence employee environmental behaviors in the home by providing employee energy benefits ("EEBs"). Employers who offer EEBs may provide employees financial support, incentives, or information specifically targeting employees' home energy and environmental behaviors, as opposed to their behaviors at work. Examples of EEBs include household energy efficiency information (e.g., Eastman Chemical n.d.), rebates on home solar panels (e.g., 3M; The Solar Community Initiative 2014), discounts for hybrid vehicles (e.g., Bank of America n.d.), and public transportation access and incentives (e.g., Visa Inc. and IBM; 2015 Employer List n.d.). Although EEBs have the potential to significantly influence employee environmental

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behaviors, little is known about them, such as who is offering them, what impact do they have on employees, and what are employer and employee motivations for participating in them.

Despite frequent past efforts to explore systematically employee environmental behavior in the workplace (Lo et al. 2012; Ones and Dilchert 2012; Ramus and Killmer 2007; Young et al. 2013) or environmental behavior in households (e.g., Abrahamse and Steg 2013; Delmas et al. 2013), little research has explicitly examined employer-initiated efforts to specifically influence the home environmental behaviors of employees. For example, Lo et al. (2012) examined 21 studies targeting environmental behavior in the workplace, and Abrahamse and Steg (2013) explored 16 studies exploring environmental behavior in the home. However, neither of these reviews contained a single study exploring an employer-based effort to influence employee environmental behavior in the home, and our own literature review did not uncover a single empirical study on this topic. This is consistent with our anecdotal observation that the adoption of employee energy benefits by employers is a relatively new phenomenon.

Likewise, the science of changing environmental behaviors, whether those behaviors occur at home or at work, has made strides in recent years, but we still lack environmental policies that can be scaled up to the size needed to make significant progress on environmental issues such as carbon emissions. Dietz et al. (2009) calculated that with the right incentives, such as employer incentives, the average household in the USA could be induced to voluntarily adopt enough energy efficiency and conservation measures to reduce its carbon dioxide emissions by 20% or 5.8 metric tons per year. Consider the implications of this for large employers: If Walmart implemented EEBs effectively, the numbers imply that its 1.5 million employees in the USA (Walmart 2016) could reduce their total emissions by 8.7 million metric tons of carbon dioxide per year, equal to the annual emissions of 300,000 American households.

This paper reports on an exploratory study of EEBs to begin the process of understanding the theoretical foundations and empirical trends of this emerging topic. The overarching research question we seek to address is why firms are offering these benefits. Is it to help attract employees and/or enhance worker satisfaction and productivity? Motivate changes in employee workplace

behavior to reduce firm energy costs? Improve environmental outcomes? Enhance firm reputation? To address these questions, we first conducted a literature review of both the theory and evidence on EEBs. This review then guided our construction of a preliminary survey of employed adults across the USA to examine four sets of questions related to EEBs. First, who is offering EEBs and in what ways? Second, why are employers offering these types of benefits? Third, why are employees enrolling in these benefits? Fourth, what effects do EEBs have on employee environmental behavior and recruitment, retention, and morale? By using theory and evidence to better understand these facets of EEBs, scholars and employers will be better situated to design scalable efforts to influence environmental behavior in both the home and the workplace.

Background: literature review on employee energy benefits

The first part of our study surveyed the academic literature and popular press to determine what if anything is known about EEBs—not only the scope benefits being offered but also what if anything is known about which employers offer them and why, why employees might adopt EEBs that are offered to them, and what impact they might have on behavior and/or employee morale. Because so little has been written about EEBs, we also surveyed the organization and human resource management literatures on both employee environmental behavior and the role of employee benefits in outcomes such as motivation and satisfaction to see what parallels we might anticipate with EEBs.

What are employee energy benefits?

Employee energy benefits entail employer efforts to influence or support employees' personal energy choices outside the workplace, such as energy use at home or personal transportation decisions. These incentives and information programs may be included as part of an employee's benefit package, or they may be used as separate rewards for employees' voluntary efforts to change their energy use behaviors outside of work. This definition of EEBs can be expanded, however, to include benefits aimed at supporting other environmental behaviors outside of work that do not directly involve energy use, such as recycling behaviors, water

conservation, or other environmentally friendly behaviors (e.g., buying local food).

Perhaps the earliest examples of programs or benefits that resemble EEBs stem from a 1984 Internal Revenue Service decision that allowed employers to offer tax-exempt support for employees who use public transportation (Enoch and Potter 2003). Subsequently, many institutions, including colleges and universities, began offering free or reduced fare tickets for public transportation (Toor and Havlick 2004). More recently, employer efforts to support employee environmental behaviors outside of work have expanded from public transportation benefits to other employee environmental decisions and behaviors, such as the Clinton Climate Initiative's (CCI) Home Energy Affordability Loan (HEAL) program (Clinton Foundation n.d.), where employers sponsor home energy audits for their employees, which are then paid back through payroll reductions. As of November 2014, the HEAL program had served 5600 individuals through 12 different employers and has produced 33.5 kT of CO₂ reductions per year (Clinton Foundation n.d.). Since 2009, EEBs such as those offered through the HEAL program and employee support for public transportation use have taken root in a wide array of industries, including insurance, banking, food production, automobile, pharmaceutical, and renewable energy industries.

Employers have offered a wide range of types of EEBs. Numerous employers have offered employees substantial subsidies to offset the cost of purchasing fuel-efficient vehicles, such as \$2000 to buy and drive hybrid vehicles to work (e.g., Bank of America, CHEP USA; Berman 2011). Employers have also used similar payments to encourage home energy efficiency upgrades, such as the global re-insurance company Swiss Re's COyou2 program, which supported employees' investment in home infrastructure and energy-efficient appliances (Swiss Re n.d.). The Vermont branch of NRG Systems, a renewable energy provider, stated that it offered an annual stipend of \$300 for compact fluorescent lighting and energy-efficient windows and also provided its employees \$1000 per year towards solar hot water systems, solar photovoltaic (PV) cells, wind turbines, and wood pellet furnaces (Dzurilla 2008). Similarly, employers also contracted directly with residential solar energy providers to secure discounts for employees (The Solar Community Initiative 2014).

Employers have also supported employees in choosing sustainable modes of transportation. In the 2000s,

the federal Environmental Protection Agency (EPA) and Department of Transportation began recognizing the Best Workplaces for Commuters (BWC; Best Workplaces for Commuters n.d.). More than 200 employers meet BWC standards, including large firms like Visa, IBM, Verizon, and Bancorp that provide one primary benefit such as public transportation passes, van-sharing systems, or telecommuting in addition to three secondary benefits such as shuttles to transit stations, carpool matching, or parking designated for carpools (Best Workplaces for Commuters 2015).

Finally, some employers have challenged employees to reduce their personal carbon footprint by offering prizes or cash bonuses for green behavior. For example, Clif Inc. employees could win up to \$960 per year in gift cards for carpooling, riding their bikes to work, or commuting via public transit (Herrera 2008). Little information is publicly available on other efforts, but occasionally employers have also reported engaging in actions that may be best classified as EEBs, such as offering access to software that provides employees with feedback on their home energy use (Green Impact n.d.; WeSpire n.d.; WSP n.d.), or having supplied employees with energy saving tips. Employers self-report using a wide range of strategies to influence the environmental behaviors of employees at home, although it is unclear to what extent this captures the full set of EEBs offered.

Why are employers offering employee energy benefits?

Organizational theory suggests at least three reasons why employers may engage in environmentally friendly behavior—and by extension we argue they might offer EEBs—competitiveness, legitimation, and ecological responsibility (Bansal and Roth 2000). Competitiveness refers to the ability to maximize long-term profitability and could include using EEBs to improve brand reputation, profits, or employee outcomes. There is reason to believe that employers are offering EEBs to improve public relations and increase short-term profit or improve long-term viability. For example, by presenting itself as an employer looking to better its employees' lives and to help the environment, an employer may seek to improve its reputations with consumers, perhaps also increasing profits. Studies suggest that a positive environmental reputation might improve a firm's performance by attracting more environmentally conscious customers (Miles and Covin 2000; Russo and Fouts 1997).

Relatedly, employers could also be looking to increase their attractiveness to potential business partners in order to maximize profits. Regarding its hybrid car program, the CEO of software firm Hyperion echoed this view: “We receive an enormous amount of goodwill for this around the globe, far beyond the cost of the program” (Berman 2011, para. 3). In turn, this goodwill may create significant revenue. Research suggests a positive correlation between firm reputation and profitability, though the direction of influence is debatable (Chauvin and Hirschey 1994; Fombrun 1996; Swanda 1990).

Employee energy benefits may also help employers secure and retain employees, as there are potential links between employer sustainability efforts and employee outcomes. A 2011 survey of nearly 400 randomly selected US-based HR professionals in the Society for Human Resources Management membership database found that 89% agreed that sustainability is important or very important to attracting talent, and 85% agree that it improves employee retention (Society for Human Resource Management 2011). Research suggests that potential employees value employers who engage in general corporate social responsibility, which includes reducing environmental impacts (Environmental Leader 2014; Corporate Responsibility Magazine 2014), leading to increased long-term retention and lower hiring costs. Employee energy benefits may also function like salary increases, but at a fraction of the cost to the employer due to the fact that EEBs are not taxable income to the employee.

Research has also found that prospective employees respond more positively to companies who portray themselves as environmentally responsible (Bauer and Aiman-Smith 1996; Behrend et al. 2009; Dzurilla 2008). Employee energy benefits may help employers strengthen company culture, and research shows that organizations with strong shared-value systems gain a competitive edge (Sørensen 2002; Keller and Richey 2006). Person-organization fit has generally been linked to employee outcomes such as positive worker attitudes, lower intentions to quit, and lower levels of work stress (Kristof 1996; Morley 2007). In particular, younger generations appear to be more concerned about this person-organization fit (Westerman and Yamamura 2007).

Finally, EEBs could lead to more efficient resource use in the workplace, and this spillover could save employers money. Bansal and Roth (2000) developed their framework of employer motivations outside the context of EEBs, but when considering EEBs, behavior

spillover could be an additional motivation as there is reason to believe EEBs could influence employee environmental behaviors *in the workplace* (Muster 2011). Employee energy benefits targeting home environmental behavior could influence environmental behavior at work through at least two routes. First, to the extent that EEBs influence employee morale and organizational commitment, they may also indirectly influence environmental actions in the workplace. Second, research by social scientists has increasingly focused in recent years on *behavior spillover* (Truelove et al. 2014). Behavior spillover is the notion that engagement in an initial environmental behavior by a person leads them to engage in other related environmental behaviors. For example, getting employees to reduce their energy use at home could lead them to reduce their energy use at work.

Recent experimental research provides evidence that inducing individuals to engage in an initial environmental behavior, such as purchasing environmentally friendly products, can influence subsequent environmental behaviors, including conserving energy and choosing sustainable modes of transportation (e.g., Lanzini and Thøgersen 2014). Additionally, correlational research has revealed that people are more likely to be consistent in their engagement in environmental behaviors when behaviors are similar between settings (e.g., there are similar ways to save energy at work and home, such as light and equipment use; Littleford et al. 2014) and when people feel capable of engaging in similar behaviors across settings (e.g., have control over saving energy at both home and school; Maki and Rothman 2016). Thus, it seems reasonable that the extent to which employees are provided with opportunities to engage in more environmentally friendly behaviors at home, they might carry these behaviors back to the workplace. Taken together, research suggests employers may offer EEBs to be more competitive, including increasing brand reputation, profits, employee outcomes, and behavior spillover.

It is less clear how EEBs may improve employer legitimacy according to the strict definition suggested by Bansal and Roth (2000), which includes concern about public and private regulations and norms. Because EEBs are a relatively new type of benefit, there are no explicit or implicit regulations and norms guiding use of EEBs. But employers may be thinking about the ever-shifting landscape of environmental regulations and norms. For example, employers could offer EEBs

because of concerns over future efforts by public or private entities to measure and cap carbon emissions associated with conducting business—including Scope 3 emissions. The World Resources Institute and the World Business Council on Sustainable Development have developed the Greenhouse Gas Protocol to help businesses and government quantify their carbon footprints. Under the protocol, Scope 3 accounts for emissions from the entire supply chain, including those related to employees commuting to work. The organizations note that although “use of the new standards is voluntary... future governments and programs may decide to use the standards or some version of the standards when creating mandatory programs or regulations” (Greenhouse Gas Protocol [n.d.](#), p. 2). Moreover, in some industries and/or locations, providing EEBs might become a norm that companies need to adopt as a normal business practice. As more and more companies adopt such programs, they might move from becoming a differentiator and instead become a cost of doing business.

Finally, employers may offer EEBs because of a genuine concern about social and environmental issues (Fryxell and Lo [2003](#)), addressing the triple bottom line of corporate social responsibility by focusing on economic, social, and environmental betterment (Aguinis [2011](#); Manika et al. [2015](#); Muster [2011](#)). Many companies assert that supporting sustainable behavior aligns with their company values and is a central element of corporate social responsibility (CSR; Glavas [2016](#); Seiwright and Unsworth [2016](#)). In a survey by the Society for Human Resource Management of more than 100 employers’ environmental practices, 78% of HR professionals reported that environmentally responsible practices were part of the organizations’ mission and vision (Society for Human Resource Management [2008](#)). For all of these reasons—employer competitiveness (including profits, employees, reputation and spillover), legitimacy, and social responsibility—employers may be offering EEBs.

Why are employees enrolling in employee energy benefits?

In relation to employee motivations for engaging in workplace environmental behaviors, scholars have proposed four focal motivations—supervisor support, social norms, personal predisposition, and self-efficacy (Ramus and Killmer [2007](#)). First, employees may

engage in environmental behavior in the workplace because their immediate supervisor offers them instrumental or social support. Second, employees who feel like organizational leadership, or even their fellow employees, wants them to engage in environmental behaviors at work may be more likely to adopt workplace environmental actions. Third, some employees may simply engage in workplace environmental behaviors because they care about social issues or they hold environmental values (Poortinga et al. [2004](#)). And fourth, employees may engage in workplace behaviors because they feel like they can and that their efforts will make a difference. These motivations could similarly influence employees to enroll in EEBs and change their environmental behaviors at home. Taken together, there are at least four plausible motivations for employees to enroll in EEBs or adopt new household environmental behaviors.

However, given the unique context presented by EEBs, we also think it is important to expand the Ramus and Killmer ([2007](#)) employee motivation framework to capture the fact that employees may actually save money or time (which we collectively label “pecuniary”) if they enroll in EEBs. Being offered solar panel subsidies, free bus passes, or the ability to work from home may help employees save money and the inconvenience of unnecessary travel. Given that available employer reports offer very little actual data on the employee motivations for enrolling in EEBs, improving our understanding of employee motivations is important when deciding which programs to offer and predicting what their likely effects will be—both for the employer and the employee.

What effect do employee energy benefits have on employee behavior and morale?

There is also little research that has examined the effect of employee energy benefit programs on employee environmental behaviors or employee morale. Some reports suggest that EEB programs have been popular among employees—5 years into the Cool Home program, 70% of Clif Bar Employees had taken advantage of the home energy subsidy, and 7200 Bank of America employees had switched to hybrid vehicles with the company’s help (Sustainable Food Trade Association [2013](#); Bank of America [n.d.](#)). Engaging in organizational citizenship behaviors, of which environmental behavior is one type, has been linked to employee outcomes

such as worker productivity and employee retention (Podsakoff et al. 2009), but to our knowledge, that relationship has not been explored in the context of EEBs.

Although there has been no systematic study of EEB programs, there is reason to believe that they might influence employee environmental behaviors. Meta-analytic evidence suggests that a wide range of behavior change policies can influence individuals' environmental behaviors in the home (Osbaldeston and Schott 2012) and the workplace (Lo et al. 2012). Examples of the types of policies that have been shown to induce behavior changes are social influence approaches (Abrahamse and Steg 2013) and financial incentives (Kollmuss and Agyeman 2002; Maki et al. 2016). By definition, EEBs are primarily directed at influencing employee environmental behaviors in the home or behaviors taking place between home and the office (e.g., commuting decisions), and thus given this past research, it seems likely that EEBs may help employees change their environmental behaviors outside of the workplace.

Employee energy benefits could also improve employee recruitment, morale, and retention. Employee job satisfaction theory generally distinguishes between factors that are often necessary to avoid employee dissatisfaction ("hygiene factors") and those whose presence may lead to increased satisfaction ("motivation factors") (Herzberg 1962). In the context of employee benefits, Lineberry and Trumble (2000) labeled these "traditional" (e.g., medical and life insurance, retirement benefits) versus "non-traditional" benefits (e.g., training programs, tuition reimbursement), respectively. Employee energy benefits would clearly fall into the latter category, which researchers have posited may be a better predictor of perceived organizational support, and hence may motivate employees to contribute to improved employer outcomes (Muse and Wadsworth 2012). Thus, based on prior theory and empirical research, EEBs may affect outcomes such as employee morale (Artz 2010; van Saane et al. 2003; Williams et al. 2008), recruitment (Casper and Buffardi 2004; Greening and Turban 2000; Thompson and Aspinwall 2009; Turban and Greening 1997), organizational commitment and organizational citizenship behaviors (Podsakoff et al. 2000), work quality (Kuvaas and Dysvik 2009), and retention (Mathieu and Zajac 1990; Somers 1995). Given the potential for EEBs to influence employee environmental behavior and morale, we wanted to explore whether there was evidence for such relationships.

Method

Current research

To gather more systematic information on EEBs, we conducted an online survey to further identify the types of employers offering EEBs and which types of EEBs they offer. Because this is a survey of employees, we could not directly ask employers about their motivations. Instead, we asked employers to report why they believed employers offer EEBs. Although existing literature has not directly focused on EEBs, related theory informs our approach. In particular, we examined firm motivations according to an expanded Bansal and Roth (2000) framework, focusing on employer competitiveness (profits, employees, reputation, and spillover), legitimacy, and social responsibility. We examined employees' motivations to enroll in EEBs according to an expanded Ramus and Killmer (2007) framework, focusing on predisposition, supervisor support, self-efficacy, organizational norms, and pecuniary benefits. Finally, we also explored how employees perceive the effectiveness of EEBs at influencing employee environmental behavior and morale. Because this work is exploratory and there is no firmly established theory that would directly guide our survey, we include open-ended questions that allow us to map back into existing related organization theory. This approach also allows us to identify any unique features of EEBs that might suggest refinements of existing organizational theory as it applies to this organizational innovation.

Respondents and procedure

To gather primary data on EEBs, we conducted the survey through [Amazon.com](https://www.amazon.com)'s Mechanical Turk (MTurk) platform, a crowdsourcing website frequently used by social science researchers through which individuals are paid to complete online tasks or surveys (see Paolacci and Chandler 2014 on the usefulness of the MTurk service for social-scientific research). We chose this approach because it allowed us to access a diverse sample of employees across industries, occupational categories, and location, who may have varied exposure and experience with EEBs. It also allowed us to collect both quantitative and qualitative data that speak to our research questions.

To participate, respondents must have been full-time employed adults working for a third-party (i.e., not self-employed). After consenting to participate in the study,

respondents completed questions pertaining to their current employment and their involvement with EEBs. Respondents were 482 adults living in the USA (209 women, 272 men, 1 individual identifying as genderqueer; mean age = 34.97, SD = 10.67). People were able to report more than one ethnicity, and the majority identified as White (85%), though some identified as African American (7%), Asian (8%), Latino (7%), Native American (1%), Pacific Islander (1%), or other (2%). Compared to the US full-time employed population in 2014, our sample was younger than the national average but had a comparable gender balance, as 57% of both our sample and the US workforce (of 20 years of age or older) were men (Bureau of Labor Statistics 2015). When comparing the racial demographics of our sample to the national workforce, respondents in our sample were more likely to identify as White (80% nationally) or Asian (6% nationally) and less likely to identify as African American (12% nationally) or Latino (16% nationally; Bureau of Labor Statistics 2015).

Measures

Employment questions Respondents reported the industry their employer was primarily associated with, their salaried or hourly status, whether they receive traditional employment benefits, whether they receive EEBs, how productive they felt at work (on a seven-point scale ranging from 0, “Never,” to 6, “Always”), how satisfied they were with their position (on a seven-point scale ranging from -3, “Completely dissatisfied,” to +3, “Completely satisfied”), and interest in working for an employer who offers EEBs (on a seven-point scale ranging from 0, “Not at all more interested,” to 6, “Much more interested”).

Knowledge and perceptions of types of employee energy benefits Respondents reported any EEBs their employers currently offered using an open-ended response option. After listing these benefits, respondents then selected from 15 options the types of EEBs offered by their employer. Both respondents who worked for an employer offering EEBs and respondents who did not then selected from the same list of 15 options which benefits they preferred their employer offer. Respondents also reported how much of a hassle they perceived EEBs to be (on a seven-point scale ranging from 0, “No effort at all,” to 6, “A great deal of effort”), and whether EEBs were worth the hassle (on a seven-point scale ranging from 0, “Not worth it at all,” to 6, “Definitely worth it”).

Motivations Respondents listed their motivations, using an open-ended response format, to describe their perceptions of the motivations of employers who offer EEBs, as well as why they would or would not participate in EEBs.¹

Environmental behavior Respondents reported the extent to which they believe that EEBs influenced their energy efficiency behavior and environmental behavior more generally, both at home and at work, responding to four total questions using a seven-point response scale from 0 (“Not at all influential”) to 6 (“Extremely influential”).

Demographics Respondents reported their age, gender, and race/ethnicity. Respondents also reported their political ideology and the extent to which they identified as an environmentalist (using a seven-point scale running from 0 “Not at all,” to 6 “Very strongly”).

Data analysis

We used both quantitative and qualitative analyses to explore data relevant to our research questions. For quantitative analyses, we examined descriptive statistics, as well as the inferential statistical approaches of chi-square, correlation, regression, and logistic regression. For qualitative analyses, particularly when examining employer and employee motivations for offering or enrolling in EEBs, multiple coders coded responses according to the expanded theoretical frameworks of Bansal and Roth (2000) and Ramus and Killmer (2007), respectively.

Results

Who are offering EEBs and which types of EEBs are they offering?

Of the 482 respondents, 82 reported working for an employer who offered some sort of employee energy benefit (17%). Of those 82 individuals, 52 (63%) reported participating in those EEBs. Thus, in our preliminary

¹ Following the open-ended questions, participants completed additional structured questions concerning employer and employee motivation. Results were consistent with the open-ended questions and are available from the authors upon request.

survey, about 10% of employees were currently availing themselves of at least one employer-sponsored energy benefit.² When examining the percentage of individuals in each industry who worked for an employer offering EEBs, the industries most commonly offering the benefits were state and local government (20% offered), other (18%), health care/education (18%), and professional/banking and finance/information technology (17%). Employee energy benefits were less common in the transportation/warehousing industry (11%), manufacturing and construction (10%), the service industry (9%), and wholesale/retail trade (5%). The higher rate in state, government, education, and health care also suggest a motivation that more likely to be social responsibility than pure profit-driven. Employers offering EEBs were also most likely to be a large private sector employer with more than 500 employees (51%), instead of small- or medium-sized private sector employers, non-profit, or government sector employers. When we entered employer characteristics (i.e., industry and type of employer) into a logistic regression predicting whether the employer offers EEBs (see Table 1), the only significant predictor was that employers in the retail industry were least likely to offer EEBs.

Employees offered EEBs were also more likely to work for a publicly traded company (52%), likely to be salaried (61%), not in a supervisor role (58%), and all except one were working for an employer who also offered traditional benefits (e.g., health insurance, a disability insurance, paid time off, or a retirement plan). We also examined whether certain types of employees were more likely to work for employers offering EEBs (i.e., employees who were white, women, older, more educated, receiving a greater income, salaried, conservative, or environmentalists), and none of these variables were related to being more likely to be working for an employer offering EEBs.

We examined the types of EEB respondents reported being offered, whether first listed as a response to open-ended prompts or selected from the 15 types of benefits (see Table 2). A total of 24 different types of EEBs were reported, largely relating to five categories: technology/

Table 1 Logistic regression model examining the predictors of whether an employer offers EEBs

Predictor	Employer offers EEBs		
	<i>B</i>	<i>SE B</i>	<i>Exp(B)</i>
Service industry	−.65	.64	.52
Professional/banking/IT	−.76	.61	.47
Wholesale/retail	−.16	.49	.74
Transportation/warehouse	−1.73*	.74	.18
Health care/education	−.75	.87	.47
State and local government	.02	.52	1.02
Other	.04	.75	1.04
Small or medium-sized private sector	.39	.46	1.48
Non-profit sector	−.48	.48	.62
Public/government sector	−1.02	.83	.36
χ^2 (<i>df</i>)		20.67 (10)	
Nagelkerke R^2		.08*	

For industry, “manufacturing and construction” was the referent. For size of company, “large private sector” was the referent. $N = 482$

SE standard error, *EEBs* employee energy benefits

* $p < .05$, ** $p < .01$

efficiency subsidies (e.g., solar panel subsidies, free or reduced price home audits), incentives for transportation or home energy behaviors (e.g., free bus passes; offering competitions or prizes for energy reduction at home), general transportation support (e.g., offering carpooling programs or offering preferential parking for carpooling employees or employees driving hybrid vehicles), general informational approaches (e.g., offering information via pamphlets, newsletters, or internal websites; providing tools to assess one’s carbon footprint), or other assorted approaches (e.g., bringing local food vendors into the office). Frequency of these different types of EEBs for the 82 respondents who report that their employers offer employee benefits can be found in Table 3; the most common benefits were allowing employees to work from home (43%) and organizing carpooling programs (40%); the least frequent types of benefits included giving away energy-efficient light bulbs (13%) and using competitions, quizzes, or games to encourage conserving energy or water at home (13%). The high frequency of working at home and carpooling programs is consistent with the competitiveness (profit) explanation as these are likely to be low cost (or even cost savings) programs for employers, as opposed to

² Note that although 7.3% (35 out of 482) of employees had access to telecommuting as a benefit—something that arguably is substantively different from other benefits (given employees benefit from this in ways other than energy savings), less than 4% (3 out of 82) had this as their only employee energy benefit. Thus, if these telecommuting benefits were excluded, our findings are unlikely to substantively change.

Table 2 Types of employee energy benefits listed or selected by respondents

Subsidies	Incentives	Transportation support	Information	Other
Offer discounts for solar panels	Provide rewards for carpooling	Reserve preferential parking for carpools	Provide informational pamphlets, newsletters, or internal websites	Support working from home
Offer discounts for hybrid cars	Offer discounts, rewards, or free passes for taking the bus	Organize carpooling to work programs	Offer classes/courses	Host local farmer's markets
Offer discounts for home energy audits or retrofits	Provide rewards for people who walk or bike to work	Reserve preferential parking for hybrids	Provide carbon footprint calculators	Organize environmental volunteering opportunities
	Use competitions, quizzes, or games to incentivize home behavior change	Host electric car charging station	Offer access to energy use feedback software	Encourage donations/dollar-for-dollar matching
	Offer discounts for other "green" products (e.g., recycled goods, organic food)	Provide free bike storage		
	Provide free energy-efficient lightbulbs	Organize guaranteed rides home for people who miss the bus		
		Organize shuttle service to work/between work sites		

programs that require financial contributions from employers.

Both respondents working for employers offering EEBs and respondents not working for employers offering these benefits reported on the types of EEBs they would prefer their employer to offer. The most popular benefits that respondents desired included giving away energy-efficient light bulbs (43% of employees offered EEBs and 58% of employees not offered EEBs, respectively), allowing employees to work from home (43 and 53%, respectively), and giving discounts or financial incentives for other environmentally sustainable products (e.g., local or organic food; 41 and 50%, respectively). Interestingly, although providing information about carpooling options and more general information about how to save energy were among the most widely offered by those employers who offered any energy benefits (40 and 33%, respectively), they were among the least desired by the employees who were offered them (22 and 15%, respectively). On the other hand, direct financial benefits were among the least offered and most desired, as giving away energy-efficient light bulbs or other discounts for energy-related products was deemed desirable by 43 and 41% of employees who are offered any energy benefit programs but only 13 and 18% of their employers offered such discounts. Given

the fact that the benefit to employers of offering financially based incentives might not be as apparent as the direct cost they incur, this is not necessarily surprising. It does suggest that potential value of future research on the benefits of such programs to employers might be appropriated. Similarly, it is not surprising that employees value those EEBs that provide direct observable pecuniary benefits or savings of commuting time. Whether or not information programs ultimately lead to similar or even higher benefits, this is not apparent to employees. Perhaps not surprisingly, employee telecommuting was the benefit most desired by all survey respondents.

Why are employers offering EEBs and why are employees enrolling?

To understand employee's perception of their employer's motivation for offering EEBs and their motivation for utilizing EEBs (or not), we asked a series of open-ended questions: "Why do you think your employer offers these employee energy benefit programs?" and "Why do you (or do you not) take part in these employee energy benefit programs?" Similar questions were asked of those whose employers do not offer EEBs: "Why do you think employers offer these

Table 3 Types of EEBs offered, desired by employees working for employers offering EEBs and desired by employees not working for an employer offering EEBs

	Percentage of EEB employers offering (N = 82)	Desired EEBs by employees offered EEBs (N = 82)	Desired EEBs by employees not offered EEBs (N = 400)
Support working from home/telecommuting	43%	43%	53%
Reserve preferential parking spaces for people who carpool to work	21%	16%	20%
Reserve preferential parking spaces for people who drive hybrid cars to work	16%	16%	12%
Organize carpooling to work programs	40%	22%	29%
Offer discounts or other rewards for people who carpool to work	24%	28%	30%
Offer discounts or other rewards for people who bus to work	34%	27%	27%
Offer discounts or other rewards for people who walk/bike to work	16%	24%	32%
Host internal company websites with tips and strategies on how to conserve energy or water at home	27%	23%	15%
Provide informational handouts or newsletters with tips and strategies on how to conserve energy or water at home	33%	15%	14%
Use competitions, quizzes, or games to encourage conserving energy or water at home	13%	24%	23%
Offer discounts or financial incentives for employees to purchase efficient technology at home, such as solar panels or hybrid cars	23%	35%	49%
Offer discounts or other financial incentives for employees to purchase other environmentally sustainable products at home (such as sustainable food, recycled goods, or water-saving devices)	18%	41%	50%
Offer employees free or reduced price energy audits	10%	29%	32%
Provide free energy-efficient lightbulbs	13%	43%	58%
Provide ways to calculate carbon footprint at home	10%	20%	20%
Other	6%	2%	4%

Total N = 482

EEBs employee energy benefits

employee energy benefit programs? and “Why would you (or would you not) take part in these employee energy benefit programs?”

To code these open-ended questions, the first author and another independent coder separately coded responses to each of the four open-ended questions. The coding results generated satisfactory inter-rater agreement (average kappa = .76 across the four open-ended questions). The first and fourth authors discussed coding discrepancies and finalized the coding results.

When coding for employer motivations for offering EEBs, we organized the coding around the three employer motivations identified by Bansal and Roth (2000): competitiveness, legitimacy, and social responsibility, while further dividing up competitiveness based on four categories: reputation value, direct financial profits, attracting and retaining quality employees, and

spillover to the workplace. Because some respondents listed multiple motivations, we allowed for multiple codes for each respondent. Overall, we found that respondents were most likely to report that employers offer EEBs because of concerns about social responsibility, to maximize profits, to recruit and retain employees, and to improve their reputation (for examples, see Table 4; for results, see Table 5). Interestingly, respondents who work for employers that do not offer such benefits were twice as likely to report employer motivation to be attracting and retaining employees (30 versus 15% of respondents who reported their employers offer EEBs). Respondents were less likely to cite employer motivations for offering EEBs to be to maintain legitimacy or induce behavior spillover to the workplace. This is not surprising given the fact that EEBs are not ubiquitous in the workplace (as noted,

Table 4 Examples of open-ended statements about motivations for employers who offer, and employees who adopt, EEBs

Firm motivations	
Competitiveness—reputation	Being a Fortune 500 company plays into a need to have a good brand image Because it is a way to look like they care
Competitiveness—profit	They see it as an incentive that allows the company to ask for higher production standards For tax benefits
Competitiveness—employees	To be competitive in the marketplace when hiring I think they view it as a further incentive to keep and entice future employees to work for them
Competitiveness—spillover	An employer would offer these programs thinking if employees practiced conserving energy at home they would probably do the same at work which would lower the company's utility bills Teaching people to conserve energy at home, where they benefit financially, might also teach them to conserve energy at work
Legitimacy	Because everyone in California is right now Regulations
Social responsibility	Because that is what kind of company we are and we want to be To make everyone aware of about environmental issues
Employee motivations	
Supervisory support	They help you understand it so it is easier Having my employer support me in these endeavors would be ideal
Organizational norms	It also fits the mission of the organization Being able to be part of a company that is willing to help with the environment is rewarding
Predisposition	I am very environmentally conscience and would like to see others be this way as well Because I think I have a moral obligation to
Self-efficacy	With my company providing monetary support my efforts see fruition whereas on my own I would not be as successful in making an impact I feel that every little contribution helps
Pecuniary savings	If my employer offered discounts pertaining getting to work or working from home then that would make my life so much easier Because working from home 1 day a week saves gas money and wear and tear on my car

EEBs employee energy benefits

we found 17% of our sample is currently being offered EEBs by their employer). A meaningful percentage of respondents reported other, ambiguous, or vague responses that were not coded in the above categories. Within those responses categorized as others, a few themes emerged such as wanting to help employees change their environmental actions (without clearly identifying the reason), wanting to save their employees money (with no obvious benefit to the employer being given), or because the employer is in an industry inherently interested in energy or environmental issues (e.g., a utility company).

When coding for employee motivations for enrolling in EEBs, we organized the coding around the four employee motivations identified by Ramus and Killmer (2007): supervisor support, organizational norms, predisposition, and self-efficacy. In addition, as noted above, we added a category for pecuniary savings to employees—something that is unique to EEBs. Because

some respondents listed multiple motivations, we allowed for multiple codes for each participant. Overall, we found that respondents indicated they were most likely to enroll in EEBs because of pecuniary savings or personal disposition. It is interesting that those employees who are not being offered EEBs are more likely to report pecuniary savings (55 versus 47%) or personal disposition (51 versus 36%) than those respondents who reported their employers offer EEBs. All respondents were less likely to cite being motivated to enroll in EEBs because of supervisor support, organizational norms, or self-efficacy. A significant percentage of responses did not fall into these categories or were sufficiently vague that they could not be classified. Within those response categorized as others, a few themes emerged such as wanting to help their employer save money or generate goodwill with their employer, to decrease stress, or improve one's health and quality of life. Some of these reasons might be examples of our earlier categories if

Table 5 Coded open-ended responses to prompts concerning why employers do or may offer EEBs and why employees do or would enroll in EEBs

Perceived employer motivations	Employees offered EEBs (<i>N</i> = 78)	Employees not offered EEBs (<i>N</i> = 398)
Competitiveness—reputation	22% (CI = 13 to 31%)	22% (CI = 18 to 26%)
Competitiveness—profit	21% (CI = 12 to 30%)	27% (CI = 22 to 31%)
Competitiveness—employees	15% (CI = 7 to 23%)	30% (CI = 26 to 35%)
Competitiveness—spillover	0%	2% (CI = 1 to 3%)
Legitimacy	5% (CI = 0 to 10%)	0%
Social responsibility	38% (CI = 27 to 49%)	36% (CI = 32 to 41%)
Other/ambiguous/vague	19% (CI = 10 to 28%)	12% (CI = 9 to 15%)
Employee motivations		
Supervisor support	4% (CI = 0 to 8%)	2% (CI = 1 to 4%)
Organizational norms	3% (CI = 0 to 6%)	2% (CI = 1 to 3%)
Personal predisposition	36% (CI = 25 to 47%)	51% (CI = 46 to 55%)
Self-efficacy	4% (CI = 0 to 8%)	1% (CI = 0 to 2%)
Pecuniary savings	47% (CI = 36 to 58%)	55% (CI = 50 to 59%)
Other/ambiguous/vague	28% (CI = 18 to 38%)	23% (CI = 19 to 27%)

Percentages with confidence intervals that do not overlap are significantly different from each other at $p < .05$

EEBs employee energy benefits, CI 95% confident intervals

fully explored in follow-up questions. For example, wanting to help an employer might be self-motivated to the extent the employer ultimately rewards employees who take part in EEBs (e.g., promotions or raises).

A small number of open-ended responses provide an alternative view of EEBs that is worth further exploration. For example, a few responses categorized as employers motivated by “social responsibility” were actually couched as complaints that EEBs might be offered. One respondent noted “They think they are better than everyone so they feel the need to control their employees for their own liberal ideology.” Similarly, a few responses we categorized as employees being motivated by “supervisory support” were actually complaining about too much supervisory control. For example, one respondent noted, “It feels more like I would be forced into doing it, rather than a choice.” Although certainly outliers, these types of responses do raise the possibility of negative spillover or counter-productive efforts and raise a host of program design issues or employee hiring approaches to ensure that such negative consequences are not realized.

Finally, we examined which variables from the survey predicted employee enrollment in EEBs. Using potentially relevant measures, we first estimated a logistic regression model to explain the types of employees who chose to enroll in EEBs (see Table 6). The only

significant explanatory variable for who is likely to enroll in EEBs is employees who strongly identified with environmental issues (“to what extent do you identify as an environmentalist?”). None of the other demographics or ideological variables were statistically significant.³ These results are consistent with the finding that people were likely to report they would enroll in EEBs in part because of personal dispositions such as concern about social or environmental issues.

What effects do EEBs have on employee behavior and morale?

We next explored correlations between key variables, including whether employees worked for an employer that offers EEBs, whether employees enrolled in offered benefits, how satisfied employees were with their job, interest in working for an employer that offered benefits, perceptions of the effort/hassle involved with the benefits, and whether employees reported that EEBs influenced their energy and environmental behaviors at home and at work (see Table 7). We found that being offered EEBs was correlated with job satisfaction. We also found that enrolling in the benefits, not just being

³ None of the predictors in our models demonstrated a problematic level of multicollinearity.

Table 6 Logistic regression model examining the predictors of choosing to enroll in EEBs

Predictor	Employees choose to enroll		
	<i>b</i>	SE <i>b</i>	Exp(<i>B</i>)
Race (White)	.12	.67	1.13
Gender (women)	−.09	.61	.91
Age	−.01	.03	.99
Education level	−.20	.35	.82
Income	.06	.21	1.06
Salaried employee	.04	.62	1.04
Political ideology (conservative)	.21	.30	1.23
Environmental identity	.63**	.18	1.88
χ^2 (<i>df</i>)		22.82 (9)	
Nagelkerke R^2		.34**	

We did not consider the relation between being offered traditional benefits and choosing to enrolling in EEBs because they were too highly related and estimates were unstable. $N = 81$

SE standard error, EEBs employee energy benefits

* $p < .05$, ** $p < .01$

offered them, made it more likely that respondents felt that their home energy and environmental behaviors were being influenced, and to a lesser extent their work behaviors. More generally, we found that people who enrolled in EEBs reported that EEBs were between “somewhat” to “moderately” influencing their environmental behaviors at home and work (energy behavior at

home: $M = 3.35$, $SD = 1.44$; environmental behavior at home: $M = 3.19$, $SD = 1.44$; energy behavior at work: $M = 3.10$, $SD = 1.70$; environmental behavior at work: $M = 2.98$, $SD = 1.54$). Finally, employees enrolled in EEBs tended to state that they required only a minimal amount of effort ($M = 2.48$, $SD = 1.37$), and that EEBs were mostly worth the effort ($M = 4.17$, $SD = 1.38$). Turning back to the correlations, people who chose to enroll in EEBs or had more interest in working for an employer offering EEBs were not more likely to state that EEBs required more effort but were more likely to state that EEBs were worth the hassle.

We also more closely examined the extent to which EEBs were related to employee satisfaction, even after controlling for relevant covariates. Table 8 reports on an OLS regression model explaining employee satisfaction for all employees (including those whose employers offer EEBs and those that do not). As expected, being salaried and having a higher income are associated with higher satisfaction. In addition, however, controlling for other demographics being offered EEBs was still a positive and significant predictor of employee satisfaction. Whether EEBs are serving as a proxy for other unobserved positive firm characteristics is beyond the scope of our study and worthy of future research. Regardless, it appears that employees who work for firms that offer EEBs report higher levels of satisfaction. However, follow-up regressions indicated that for those employees who have access to EEBs, enrolling in EEBs

Table 7 Correlations between survey measures

	1	2	3	4	5	6	7	8	9
1. EEBs offered by employer	—								
2. Participant enrolled in EEBs	—	—							
3. Employee satisfaction with work	.12**	.01	—						
4. Interest in working for employer offering EEBs	.05	.22*	.07	—					
5. Belief that EEBs require effort	−.34**	−.19	.10	.20	—				
6. Belief that EEBs are worth the hassle	−.04	.36**	.25*	.40**	.10	—			
7. EEBs influence energy behavior at home	−.18	.26*	.10	.53**	.43**	.54**	—		
8. EEBs influence environmental behavior at home	−.20	.24*	.10	.57**	.47**	.58**	.88**	—	
9. EEBs influence energy behavior at work	−.06	.20	.20	.47**	.34**	.55**	.81**	.79**	—
10. EEBs influence environmental behavior at work	−.20	.19	.25*	.48**	.35**	.58**	.78**	.78**	.91**

Variables 1, 3, and 4 were asked of all 482 respondents. Variables 2, 5, 6, 7, 8, 9, and 10 were asked of the 82 respondents who reported working for an employer that offered EEBs

EEBs employee energy benefits, Enviro environmental

* $p < .05$, ** $p < .01$

Table 8 Regression models examining the predictors of employee satisfaction: model 1 examines whether being offered EEBs predicts satisfaction using all employees ($N=480$) and model 2examines whether enrolling in EEBs predicts satisfaction using only employees offered EEBs ($N=80$)

Predictor	Employee satisfaction (model 1)		Employee satisfaction (model 2)	
	<i>b</i>	SE <i>b</i>	<i>b</i>	SE <i>b</i>
Race (White)	.15	.18	-.10	.34
Gender (women)	.23	.13	.28	.30
Age	-.001	.01	.01	.01
Education level	-.02	.08	.01	.17
Income	.16**	.04	.06	.10
Salaried employee	.32*	.15	.15	.31
Offered traditional benefits	.24	.22	.77	1.28
Political ideology (conservative)	-.03	.06	-.06	.15
Environmental identity	.02	.04	.04	.09
Offered EEBs	.42*	.19		
Enrolled in EEBs			-.16	.32
<i>F</i> (<i>df</i>)	4.67 (10, 470)**		.29 (10, 70)	
Adjusted <i>R</i> ²	.07		-.10	

SE standard error, *EEBs* employee energy benefits* $p < .05$, ** $p < .01$

itself was not a significant predictor of employee satisfaction. Finally, additional regressions indicated that both being offered EEBs and enrolling in EEBs were not related to self-reported worker productivity (see Table 9).

Discussion

Overall, we have used the organization theory and human resource management literatures, combined with new survey results, to build a foundation for what we know about EEBs, including their rate of prevalence, employer and employee motivations, and their potential positive effect on employee behavior and morale. To move beyond the descriptive and correlational evidence provided by the present research, experimental work needs to consider how strongly EEBs affect employee recruitment, retention, morale, and behavior. Furthermore, future research needs to determine how best to maximize the effectiveness of EEBs from both the employer's and society's perspective.

Organization theory proved useful when exploring motivations employers may have for offering EEBs, and employees have for enrolling in EEBs. Guided by

Bansal and Roth's (2000) framework, we found that employees perceived that employers offer EEBs to improve their reputation, maximize profits, recruit and retain employees, and because of a genuine concern about environmental or social issues. Guided by Ramus and Killmer's (2007) framework, we also found employees express interest in EEBs because of personal predispositions and the pecuniary benefits associated with EEBs.

Although both frameworks proved useful when trying to understand employees' qualitative answers, a meaningful percentage of responses did not conform to the original frameworks and suggested refinements of these frameworks to account for EEBs. For example, the Ramus and Killmer (2007) framework does not adequately capture the possibility of employee pecuniary value—which is not surprising given their focus on workplace behavior. Similarly, although the Bansal and Roth (2000) framework of firm motivations clearly focuses on competitiveness, a potentially significant motivation for EEBs is the positive spillover from employee behavior and home to the workplace—something that is entirely consistent with competitiveness but also worthy of its own category of inquiry. Finally, we found it useful to consider the synergy between these

Table 9 Regression models examining the predictors of employee productivity: model 1 examines whether being offered EEBs predicts productivity among all employees ($N = 480$) and model 2examines whether enrolling in EEBs predicts productivity among only employees offered EEBs ($N = 80$)

Predictor	Employee productivity (model 1)		Employee productivity (model 2)	
	<i>b</i>	SE <i>b</i>	<i>b</i>	SE <i>b</i>
Race (White)	.13	.17	.09	.33
Gender (women)	.12	.12	-.12	.28
Age	.01*	.01	.03	.01
Education level	-.04	.07	.10	.16
Income	.03	.04	.12	.10
Salaried employee	-.24	.14	.50	.29
Offered traditional benefits	.61**	.20	-.42	1.22
Political ideology (conservative)	-.04	.06	-.10	.14
Environmental identity	.07	.04	.16	.09
Offered EEBs	.09	.17		
Enrolled in EEBs			-.05	.31
<i>F</i> (<i>df</i>)	3.51 (10, 470)**		1.22 (10, 70)	
Adjusted <i>R</i> ²	.05		.03	

SE standard error, *EEBs* employee energy benefits* $p < .05$. ** $p < .01$

two frameworks, as offering certain types of EEBs may better match certain types of employee motivations. For example, employers looking to recruit employees interested in the pecuniary benefits of EEBs may want to offer EEBs that lead to the greatest amount of financial savings. Alternatively, employers wanting to recruit employees who care about environmental outcomes may want to offer EEBs that lead to the greatest reductions in home carbon emissions. Similarly, a firm primarily interested in its external global reputation on carbon emissions might consider offering EEBs that directly affect its Scope 3 emissions.

We found that EEBs were linked to work satisfaction; in particular, employees offered EEBs were more satisfied with their job, even after taking into account potential confounds. Of course, future research will need to further explore the extent to where there is any causal connection between EEBs and satisfaction. A number of relevant literatures could help inform our understanding of this potential link, as we know that benefits can contribute to organizational commitment and worker satisfaction (Artz 2010; van Saane et al. 2003; Williams et al. 2008). Relevant research on person-organization fit also suggests that finding employees

who are a good fit for the organization can lead to more positive worker attitudes, lower intentions to quit, and lower levels of work stress (Kristof 1996; Morley 2007). Although theory does not necessarily predict which EEBs will be offered by employers in general, it does provide testable hypotheses about which employees are most likely to be motivated by EEBs and thus which employers are most likely to find EEBs beneficial to their corporate objectives. For example, employers looking to attract employees who are concerned about social or environmental issues might consider offering and advertising EEBs, perhaps in part because employees who care about social issues may be good organizational citizens (Daily et al. 2009). This practice may become increasingly important, as younger generations report being particularly concerned about this person-organization fit (Westerman and Yamamura 2007). Researchers should examine whether EEBs do actually lead to the hiring of more competitive employees and improve employee retention. Researchers should also examine why some organizations have hesitated to adopt EEBs, including their perceptions of key barriers to adoption of these programs and their own self-reported motivations for offering EEBs. It may be

that employers are not themselves familiar with EEBs, they do not believe EEBs will be effective, or maybe even that they will turn off some potential employees (as suggested by a small number of our respondents).

We also found some support for the idea that EEBs would be linked to employee environmental behaviors. However, as Ramus (2001) argues, there are many ways in which employer efforts can support and influence employee environmental actions, and future work should consider the vast toolbox of behavior change interventions that could be used with EEBs to influence behavior change. Related to behavior spillover of employee actions between home and work, social scientists have often explored negative spillover of behavior, such as “rebound” effects, which occur when people increase their energy use following energy efficiency improvements (Binswanger 2001; Truelove et al. 2014). Although the evidence to date suggests the rebound effect—when it exists—typically does not offset the positive spillover of the intervention itself (Gillingham et al. 2014), it is worth considering negative and positive spillover as a possible outcome when examining EEBs.

Assuming EEBs are effective at influencing employee morale, recruitment, and environmental behaviors, it is also important to understand the determinants of employee participation. The human resource management literature suggests that benefits generally can have a positive effect on work satisfaction, employee recruitment, and retention (Artz 2010; van Saane et al. 2003; Williams et al. 2008), but some of these outcomes may only come about if employers get employees to enroll in the benefits. As the survey results suggest, barriers may include beliefs that the benefits will not effectively address environmental problems, that the benefits will not save employees money, or that the benefits are not worth the cost or effort. Relatedly, it is unclear whether employees desire certain EEBs for environmental reasons or other considerations, such as having the opportunity to work from home. A strong correlate of EEB enrollment was employee perceptions of whether the benefits were worth the hassle, suggesting a route through which employers could attempt to induce greater employee involvement in employee energy benefit programs (Stern et al. 2010). Other barriers may be idiosyncratic to regions of the country or world, such as access to public transportation, or idiosyncratic to companies, such as lack of clarity about how to enroll in the benefits. It is even possible that some employees would prefer to not work for employers offering EEBs,

perhaps over concerns about subsequent lessening of more traditional benefits.

The present research is subject to a number of potential limitations. First, although we attempted to collect a large number of respondents by sampling approximately 500 employees, we only obtained response from 82 employees who had been offered EEBs. This sample size limits the confidence we can have in certain findings, and new research should aim for larger samples of employees. Ideally, future research should explore partnerships with employers who are currently offering, or thinking about offering, EEBs. This may make it more likely that larger samples of employees being offered EEBs can be accessed and would allow for comparing employees enrolling versus not enrolling in EEBs who work for the same employer. These approaches could look to confirm the findings revealed by this research, such as whether being offered or enrolling in EEBs is linked to employee satisfaction, as well as test new questions. In particular, experimental research should follow the present correlational research to further test the links between EEBs and employee outcomes, including morale and environmental behavior.

By relying on self-reported survey responses, it is possible that certain relationships between variables could be inflated because of respondents’ social desirability concerns or common method variance (Podsakoff et al. 2003; Richardson et al. 2009; Spector 2006). However, in the design of the survey materials, we aimed to decrease any feeling respondents may have had of social desirability concerns, for example by stating in the consent form that the data would be anonymous and that respondents could skip questions they did not want to answer. Our regression analyses also were designed to decrease concerns about alternative explanations for the effects, but multiple comparisons may have inflated our chances of finding significant effects.

It also should be cautioned that our projections for the carbon potential of EEBs are prefaced on the assumption that respondents accurately reported whether they worked for an employer that was offering EEBs. It is possible some people work for an employer who actually does offer EEBs but the employee fails to realize it, or they wrongly believe their employer does offer EEBs. Future work should locate further proof for the seemingly common nature of EEBs. Likewise, future work should aim to sample employees from a wider range of industries, as our study perhaps incidentally oversampled employees from certain industries (e.g., profession/banking/finance/

information, health care/education, and state/local government). Although this is too small a sample to draw definitive conclusions, it is notable that the industries with higher rates of EEBs are among the least energy-intensive. Finally, follow-up research should measure and analyze employee environmental behaviors in greater detail, as the present measures were only focused on general energy and environmental behavior at home and the workplace. Additional detail would allow us to better determine which behaviors are most likely to be influenced and which lead to spillover from home to work.

Conclusion

Employee energy benefit programs are a strategy that employers are using to support employees' environmental behaviors at home. Yet, little is known about the types and prevalence of these benefits, employer and employee motivations for offering and participating in them, and their actual effect on employee morale and environmental behavior. To begin to close this gap in knowledge, we conducted a review of the current literature on EEBs, guided by relevant theory from organization theory and human resource management. Furthermore, we developed an exploratory survey to provide initial estimates of the types of benefits being offered by employers, the motivations that induce employers to offer these benefits and the motivations employees have for participating in them, and the perceived effect of these benefits on employee morale and environmental behavior. Although the findings from this survey are not meant to be definitive, they demonstrate that a small but significant portion of US full-time workers (likely 10% or more) are participating in these programs, a wide range of EEB types are being offered, employer and employee motivations vary, and the programs have the potential to affect behavior and morale. They also suggest several fruitful areas for future research as well as the potential for a more targeted approach for employers considering offering EEBs.

Funding This research was funded in part by a Vanderbilt University Trans-institutional program grant.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

References

- 2015 Employer List (n.d.). Retrieved July 20, 2015 from <http://www.bestworkplaces.org/list/2012-list-by-state/>
- Abrahamse, W., & Steg, L. (2013). Social influence approaches to encourage resource conservation: a meta-analysis. *Global Environmental Change*, 23, 1773–1785.
- Aguinis, H. (2011). Organizational responsibility: doing good and doing well. In S. Zedeck (Ed.), *APA handbook of industrial and organizational psychology* (Vol. 3, pp. 855–879). Washington, DC: American Psychological Association.
- Artz, B. (2010). Fringe benefits and job satisfaction. *International Journal of Manpower*, 31, 626–644.
- Bank of America. (n.d.). Bank of America energy benefits. Retrieved July 20, 2015 from <http://makeanimpact.bankofamerica.com/EnergyBenefits>
- Bansal, P., & Roth, K. (2000). Why companies go green: a model of ecological responsiveness. *The Academy of Management Journal*, 43, 717–736.
- Bauer, T. N., & Aiman-Smith, L. (1996). Green career choices: the influence of ecological stance on recruiting. *Journal of Business and Psychology*, 10, 445–458.
- Behrend, T. S., Baker, B. A., & Thompson, L. F. (2009). Effects of pro-environmental recruiting messages: the role of organizational reputation. *Journal of Business and Psychology*, 24, 341–350.
- Berman, B. (2011). Corporate incentives for hybrids and alternative cars. Retrieved from <http://www.hybridcars.com/corporate-incentives/>
- Best Workplace for Commuters (2015). 2015 employers list. Retrieved from <http://www.bestworkplaces.org/list/2012-list-by-state/>.
- Best Workplaces for Commuters (n.d.). Retrieved from <http://www.bestworkplaces.org/>
- Binswanger, M. (2001). Technological progress and sustainable development: what about the rebound effect? *Energy Policy*, 36, 119–132.
- Bureau of Labor Statistics (2015, February 12). *Labor force statistics from the current population survey*. Retrieved from <http://www.bls.gov/cps/tables.htm>.
- Casper, W. J., & Buffardi, L. C. (2004). Work-life benefits and job pursuit intentions: the role of anticipated organizational support. *Journal of Vocational Behavior*, 65, 391–410.
- Chauvin, K. W., & Hirschey, M. (1994). Goodwill, profitability, and the market value of the firm. *Journal of Accounting and Public Policy*, 13, 159–180.
- Clinton Foundation (n.d.). HEAL. Retrieved from <https://www.clintonfoundation.org/clinton-presidential-center/about/heal>.
- Corporate Responsibility Magazine (2014). The cost of a bad reputation—the impacts of corporate reputation on talent acquisition. Retrieved from <http://www.commitforum.com/index.php/the-cost-bad-reputation-the-impacts-corporate-reputation-talent-acquisition/>.
- Daily, B. F., Bishop, J. W., & Govindarajulu, N. (2009). A conceptual model for organizational citizenship behavior directed toward the environment. *Business Society*, 48, 243–256.
- Delmas, M. A., Fischlein, M., & Asensio, O. I. (2013). Information strategies and energy conservation behavior: a meta-analysis of experimental studies from 1975–2012. *Energy Policy*, 61, 729–739.

- Dietz, T., Gardner, G. T., Gilligan, J., Stern, P. C., & Vandenbergh, M. P. (2009). Household actions can provide a behavioral wedge to rapidly reduce US carbon emissions. *Proceedings of the National Academy of Sciences of the United States of America*, 106, 18452–18456.
- Dzurilla, D. (2008). Renewable energy firms strike gold with employee energy benefits. GreenBiz. Retrieved from <http://www.greenbiz.com/blog/2008/01/13/renewable-energy-firms-strike-gold-green-employee-benefits>.
- Eastman Chemical (n.d.). Employees. Retrieved from http://www.eastman.com/Company/Sustainability/Social_Responsibility/Pages/Employees.aspx
- Enoch, M., & Potter, S. (2003). Encouraging the commercial sector to help employees to change their travel behaviour. *Transport Policy*, 10, 51–58.
- Environmental Leader (2014). Employees want to work for environmentally responsible CEOs. Retrieved from <http://www.environmentalleader.com/2014/10/07/employees-want-to-work-for-environmentally-responsible-ceos/>
- Fombrun, C. J. (1996). *Reputation: realizing value from the corporate image*. Boston: Harvard Business School Press.
- Fryxell, G. E., & Lo, C. W. H. (2003). The influence of environmental knowledge and values on managerial behaviours on behalf of the environment: an empirical examination of managers in China. *Journal of Business Ethics*, 46, 45–69.
- Gillingham, K., Rapson, D., & Wagner, G. (2014). The rebound effect and energy efficiency policy (FEEM Working Paper No. 107.2014). Retrieved from Social Science Research Network: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2550710
- Glavas, A. (2016). Corporate social responsibility and organizational psychology: an integrative review. *Frontiers in Psychology*, 7. <https://doi.org/10.3389/fpsyg.2016.00144>.
- Green Impact (n.d.) Web-based engagement tool. Retrieved from http://www.greenimpact.com/sustainability_employee_engagement/.
- Greenhouse Gas Protocol (n.d.) FAQ. Retrieved from <http://www.ghgprotocol.org/files/ghgp/public/MAT.pdf>.
- Greening, D. W., & Turban, D. B. (2000). Corporate social performance as a competitive advantage in attracting a quality workforce. *Business & Society*, 39, 254–280.
- Herrera, T. (2008). Driving a low-carbon commute. GreenBiz. Retrieved from <http://www.greenbiz.com/news/2008/09/14/driving-low-carbon-commute>.
- Herzberg, F. (1962). *Work and the nature of man*. New York: Thomas Y. Crowell.
- Keller, K. L., & Richey, K. (2006). The importance of corporate brand personality traits to a successful 21st century business. *Journal of Brand Management*, 14, 74–81.
- Kollmuss, A., & Agyeman, J. (2002). Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8, 239–260.
- Kristof, A. L. (1996). Person-organization fit: an integrative review of its conceptualizations, measurement, and implications. *Personnel Psychology*, 49, 1–49.
- Kuvaas, B., & Dysvik, A. (2009). Perceived investment in employee development, intrinsic motivation and work performance. *Human Resource Management Journal*, 19, 217–236.
- Lanzini, P., & Thøgersen, J. (2014). Behavioural spillover in the environmental domain: an intervention study. *Journal of Environmental Psychology*, 40, 381–390.
- Littleford, C., Ryley, T. J., & Firth, S. K. (2014). Context, control and the spillover of energy use behaviours between office and home settings. *Journal of Environmental Psychology*, 40, 157–166.
- Lineberry, J., & Trumble, S. (2000). The role of employee benefits in enhancing employee commitment. *Compensation and Benefits Management*, 16, 9–14.
- Lo, S. H., Peters, G. Y., & Kok, G. (2012). A review of determinants of and interventions for proenvironmental behaviors in organizations. *Journal of Applied Social Psychology*, 42, 2933–2967.
- Maki, A., Burns, R. J., Ha, L., & Rothman, A. J. (2016). Paying people to protect the environment: a meta-analysis of financial incentive interventions to promote proenvironmental behaviors. *Journal of Environmental Psychology*, 47, 242–255.
- Maki, A., & Rothman, A. J. (2016). Understanding proenvironmental intentions and behaviors: the important of considering both the behavior setting and the type of behavior. *Journal of Social Psychology*, 157, 517–531. <https://doi.org/10.1080/00224545.2016.1215968>.
- Manika, D., Wells, V. K., Gregory-Smith, D., & Gentry, M. (2015). The impact of individual attitudinal and organizational variables on workplace environmentally friendly behaviours. *Journal of Business Ethics*, 126, 663–684.
- Mathieu, J. E., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, 108, 171–194.
- Miles, M. P., & Covin, J. G. (2000). Environmental marketing: a source of reputational, competitive, and financial advantage. *Journal of Business Ethics*, 23, 299–311.
- Morley, M. J. (2007). Person-organization fit. *Journal of Managerial Psychology*, 22, 109–117.
- Muse, L. A., & Wadsworth, L. L. (2012). An examination of traditional versus non-traditional benefits. *Journal of Managerial Psychology*, 27(2), 112–131.
- Muster, V. (2011). Companies promoting sustainable consumption of employees. *Journal of Consumer Policy*, 34, 161–174.
- Ones, D. S., & Dilchert, S. (2012). Environmental sustainability at work: a call to action. *Industrial and Organizational Psychology*, 5, 444–466.
- Osbaldeston, R., & Schott, J. P. (2012). Environmental sustainability and behavioral science: meta-analysis of proenvironmental behavior experiments. *Environment and Behavior*, 44, 257–299.
- Paolacci, G., & Chandler, J. (2014). Inside the Turk: understanding Mechanical Turk as a participant pool. *Current Directions in Psychological Science*, 23, 184–188.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88, 879–903.
- Podsakoff, P. M., MacKenzie, S. B., Paine, J. B., & Bachrach, D. G. (2000). Organizational citizenship behaviors: a critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management*, 26, 513–563.

- Podsakoff, N. P., Whiting, S. W., Podsakoff, P. M., & Blume, B. D. (2009). Individual- and organizational-level consequences of organizational citizenship behaviors: a meta-analysis. *Journal of Applied Psychology*, 94, 122–141.
- Poortinga, W., Steg, L., & Vlek, C. (2004). Values, environmental concern, and environmental behavior: a study into household energy use. *Environment and Behavior*, 36, 70–93.
- Ramus, C. A. (2001). Organizational support for employees: encouraging creative ideas for environmental sustainability. *California Management Review*, 43, 85–105.
- Ramus, C. A., & Killmer, A. B. C. (2007). Corporate greening through prosocial extrarole behaviours—a conceptual framework for employee motivation. *Business Strategy and the Environment*, 16, 554–570.
- Richardson, H. A., Simmering, M. J., & Sturmans, M. C. (2009). A tale of three perspectives: examining post hoc statistical techniques for detection and correction of common method variance. *Organizational Research Methods*, 12, 762–800.
- Russo, M. V., & Fouts, P. A. (1997). A resource-based perspective on corporate environmental performance and profitability. *Academy of Management Journal*, 40, 534–559.
- Seivwright, A. N., & Unsworth, K. L. (2016). Making sense of corporate social responsibility and work. *Frontiers in Psychology*, 7. <https://doi.org/10.3389/fpsyg.2016.00443>.
- Shrivastava, P. (1995). The role of corporations in achieving ecological sustainability. *Academy of Management Review*, 20, 936–960.
- Society for Human Resource Management (2008). SHRM survey brief: green workplace. Retrieved from <https://www.shrm.org/Research/SurveyFindings/Articles/Documents/SHRM%20Green%20Workplace%20Survey%20Brief.pdf>.
- Society for Human Resource Management (2011). Advancing sustainability: HR's role. Retrieved from https://www.shrm.org/resourcesandtools/tools-and-samples/toolkits/documents/11-0066_advstainhr_fnl_full.pdf.
- Somers, M. J. (1995). Organizational commitment, turnover and absenteeism: an extension of direct and interaction effects. *Journal of Organizational Behavior*, 16, 49–58.
- Sørensen, J. B. (2002). The strength of corporate culture and reliability of firm performance. *Administrative Science Quarterly*, 47, 70–91.
- Spector, P. E. (2006). Method variance in organizational research: truth or urban legend? *Organizational Research Methods*, 9, 221–232.
- Starik, M., & Marcus, A. A. (2000). Introduction to the special research forum on the management of organizations in the natural environment: a field emerging from multiple paths, with many challenges ahead. *Academy of Management Journal*, 43, 539–546.
- Stern, P. C., Gardner, G. T., Vandenberg, M. P., Dietz, T., & Gilligan, J. M. (2010). Design principles for carbon emissions reduction programs. *Environmental Science and Technology*, 44, 4847–4848.
- Sustainable Food Trade Association. (2013). Implementing sustainability: a case study. Retrieved from <http://www.sustainablefoodtrade.org/wp-content/uploads/2013/10/SFTA-Case-Study-Clif-Bar-2013-Final-21.pdf>.
- Swanda, J. R. (1990). Goodwill, going concern, stocks and flows: a prescription for moral analysis. *Journal of Business Ethics*, 9, 751–759.
- Swiss Re (n.d.). COyou2 programme. Retrieved from http://www.swissre.com/corporate_responsibility/coyou2_programme.html.
- The Solar Community Initiative-Leasing Solar Panels. (2014). Retrieved July 20, 2015 from <http://www.vista-solar.com/solar-community-initiative-leasing-solar-panels-100k-people/>.
- Thompson, L. F., & Aspinwall, K. R. (2009). The recruitment value of work/life benefits. *Personnel Review*, 38, 195–210.
- Toor, W., & Havlick, S. W. (2004). *Transportation & sustainable campus communities: issues, examples, and solutions*. Washington, DC: Island Press.
- Truelove, H. B., Carrico, A. R., Weber, E. U., Raimi, K. T., & Vandenberg, M. P. (2014). Positive and negative spillover of pro-environmental behavior: an integrative review and theoretical framework. *Global Environmental Change*, 29, 127–138.
- Turban, D. B., & Greening, D. W. (1997). Corporate social performance and organizational attractiveness to prospective employees. *Academy of Management Journal*, 40, 658–672.
- van Saane, N., Sluiter, J. K., Verbeek, J. H. A. M., & Frings-Dresen, M. H. W. (2003). Reliability and validity of instruments measuring job satisfaction—a systematic review. *Occupational Medicine*, 53, 191–200.
- Walmart. (2016). Company facts. Retrieved from <http://corporate.walmart.com/newsroom/company-facts>.
- WeSpire (n.d.). WeSpire employee engagement platform. Retrieved from <http://www.wespire.com/employee-engagement-platform/>.
- Westerman, J. W., & Yamamura, J. H. (2007). Generational preferences for work environment fit: effects on employee outcomes. *Career Development International*, 12, 150–161.
- Williams, M. L., Brower, H. H., Ford, L. R., Williams, L. J., & Carraher, S. M. (2008). A comprehensive model and measure of compensation satisfaction. *Journal of Occupational and Organizational Psychology*, 81, 639–668.
- WSP. (n.d.). PACT. Retrieved from <http://www.wspgroup.com/en/WSP-USA/Who-we-are-USA/Sustainability/PACT/>.
- Young, W., Davis, M., McNeill, I. M., Malhotra, B., Russell, S., Unsworth, K., & Clegg, C. W. (2013). Changing behaviour: successful environmental programmes in the workplace. *Business Strategy and the Environment*. Advance online publication, 24, 689–703. <https://doi.org/10.1002/bse.1836>.