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Green is Good but is Usability Better? Consumer Reactions to Environmental Initiatives in Web-based Electronic Services

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ABSTRACT. There is an emerging consensus in the corporate social responsibility (CSR) literature suggesting that the quest for the so-called business case for CSR should be abandoned. In the same vein, several researchers have suggested that future research should start examining not *whether*, but rather *when* CSR is likely to have strengthened, weakened or even nullified effects on organizational outcomes (e.g. Margolis et al., 2007; Kiron et al., 2012). Using perspectives from several theoretical frameworks (Needs Theory, Technology Acceptance Theory, and Psychological Distance Theory), we contribute to the literature by empirically examining the tension between functional and sustainability attributes in a novel context, namely that of green Information Systems (IS), in the context of e-banking services. The findings indicate that the positive effect of CSR on users' attitudes towards green e-banking services is moderated by two primarily utilitarian IS factors – namely perceived ease of use and perceived usefulness – and an important utilitarian individual difference variable – namely perceived self-efficacy with technology. Our findings are also important if interpreted within the context of the ethical decision-making literature (e.g. O'Fallon and Butterfield, 2005), as they indicate that the linkage between moral judgment and moral outcomes is unlikely to be that straightforward.

KEYWORDS: corporate social responsibility, ethical consumerism, green websites, perceived ease of use, perceived usefulness, self-efficacy, interaction effects, banking

Introduction

The Debate over Corporate Social Responsibility (CSR)

A steadily increasing number of companies acknowledge the significance of sustainability and adjust their corporate strategies to achieve “development that meets the needs of the present without comprising the ability of future generations to meet their own needs” (Hult, 2011;

WCED, 1987). Indeed, companies have started investing in the global sustainability problem/opportunity by developing transparency (Vaccaro and Madsen, 2009), digital sustainability (Busch, 2011) and overall Corporate Social Responsibility (CSR) strategies that have a positive impact environmentally, socially and economically (Sheth et al., 2011;). To give an example, according to Werther and Chandler (2011), the Ethics and Compliance Officers Association reports that 85% of Fortune 500 companies hired compliance officers in 2008.

On the other hand, stakeholders seem to remain skeptical and possibly cynical of the necessity for the adoption of sustainability practices. In a recent review article, Du et al. (2010, p. 9) discuss this phenomenon further, suggesting that “the next key challenge of CSR communication is how to minimize stakeholder skepticism”. The main argument of the skeptics derives from the so-called Friedmanisue view of sustainability, namely that the adoption of sustainability disorientates businesses from their main objective (i.e. to maximize the wealth of shareholders) (Karnani, 2011). Other critics assume a different perspective, criticizing corporate sustainability practices as a substitute for effective public policy (Reich, 2008).

At the same time, several stakeholder groups accuse companies of greenwashing (i.e. misleading consumers regarding the environmental practices of a company) (Laufer, 2003). For example, Greenpeace urges companies to: “Clean Up your Acts, NOT your Image” (stopgreenwash.org, 2012). Similarly, the University of Oregon, in partnership with EnviroMedia Social Marketing, created the Greenwashing Index, which allows examples of greenwashing to be uploaded and rated by the public (greenwashingindex.org, 2012). Greenwashing allegations are strengthened by the fact that many companies seem to spend more on advertising a corporate responsibility campaign than on helping the cause in question. For example, American Express’s Statue of Liberty campaign cost the company \$6 million to

advertise, while only a third of this amount was generated for the actual cause (i.e. \$1.7 million) (Berglind and Nakata, 2005). Similarly, in 1999, Phillip Morris made \$75 million in charitable contributions, and then launched a \$100 million campaign to publicize them (Porter and Kramer, 2006). In all, these practices have led to arguments that CSR breeds public cynicism, suspicion and cause exploitation (Reuters, 2008; Progressive Grocer, 2008).

Do Consumers Really Care about CSR?

While this debate at the macro-CSR level seems to be escalating, academic research over the past decade has started uncovering an issue that may render such a debate irrelevant. This relates to whether consumers are interested in company CSR initiatives at all, and, if so, under what conditions (e.g. Sen and Bhattacharya, 2001). However, while much effort to understand this issue centers on what companies can do to instigate consumers' positive attitudes towards such CSR initiatives (e.g. Lee and Lee, 2012; Groza et al., 2011; Stanaland et al., 2011; Wagner et al., 2009; Xiaoli and Kwangjun, 2007), or what factors may inhibit consumers from accessing ethical products of both well-known manufacturers (e.g. Carrington et al., 2010), and small, fair-trade producers (e.g. De Pelsmacker et al., 2005), companies seem to neglect the fact that customers, under certain conditions, may be reluctant to trade off functional product attributes such as quality, price, brand name, etc., in favor of company CSR initiatives such as anti-sweatshops, environmentally friendly production and disposal, protection of animal rights, community contributions, etc.

In fact, a growing body of research has provided significant evidence on the so-called "myth of the ethical consumer" (e.g. Carrigan and Attalla, 2001; Devinney et al., 2010). Central to this research stream is the notion that not all consumers care equally about company CSR initiatives (Auger et al., 2003; 2008). Moreover, this stream of research has uncovered a number

of psychological mechanisms such as neutralization (Chatzidakis et al., 2007; Umphress and Bingham, 2011), or “belief in a just word” (White et al., 2012), and rationalization (Belk et al., 2005; Eckhardt et al., 2010), which consumers utilize in order to justify their decisions for not supporting company CSR initiatives and continuing to use products and services with dubious ethical production and marketing standards.

Contributions of the Study: Corporate Social Responsibility, Electronic Services & the Tension between Utilitarian and Social/Environmental Features

Despite the important advances within this stream of research, there is a striking absence of empirical findings with regards to consumers’ perceptions and behavioral intentions for non-product related CSR initiatives. For example, service providers like banks, hotels, and airlines are heavily promoting their efforts towards minimizing the CO₂ footprint of their operations. Within the financial services sector, the advent of electronic services has revolutionized their distribution, and due to its huge potential for substituting a large number of organizational and environmentally harmful activities, it naturally lends itself towards what has recently been coined “green IS” (Melville, 2010; Watson et al., 2010).

Grounded in the growing research stream of ethical consumerism (e.g. Carrigan and Attalla, 2001; Devinney et al., 2010), and the technology acceptance model (TAM – Davis, 1989), the present study attempts to understand consumers’ perceptions about company CSR initiatives within the financial services sector, and to identify the conditions under which such initiatives can contribute towards encouraging consumers to develop positive attitudes and behavioral intentions about financial institutions. From an academic point of view, the contribution of the study is threefold.

First we contribute to the emerging CSR literature by examining the tension between utilitarian/functional and social/environmental features (e.g. Auger et al., 2008; Luo and Bhattacharya, 2006; 2009). Specifically, we set out to theoretically and empirically explore when CSR is more likely to pay off, namely to examine which utilitarian conditions cause CSR initiatives to be more deterministic in influencing consumers' attitudes and behavioral intentions. This is important in light of recent research calls in CSR for more studies examining not *whether* CSR works, but rather *how* and *when* (Margolis et al., 2007; Kiron et al., 2012).

Second, the study contributes to the ethical-decision-making literature by answering research calls for more studies examining contextual influences, in the form of moderation effects, on the linkage between moral judgment and moral intentions (e.g., O'Fallon and Butterfield, 2005). Specifically, based on an extensive review of the ethical decision-making literature between 1996 and 2003, O'Fallon and Butterfield (2005, p. 405) conclude that one of the major weaknesses of this literature is a lack of consideration of interaction effects (see also Chatzidakis et al., 2007). In a more recent, extensive review of this literature, Tenbrusel and Smith-Crowe (2008, p. 579) demonstrate that most research on ethical decision-making focuses on correlations between antecedents and outcomes, rendering results decidedly mixed. We argue that this state of affairs can be, among others, attributed to lack of research examining moderation effects likely to govern the moral-judgments – moral-outcomes linkage. These same authors suggest that future research should focus on the processes underlying ethical decision making, particularly examining not only “whether” but also “when” and “how” moral judgments influence emotions and behaviors. Therefore, building on these calls for research and the IS adoption literature, we examine the moderating role of three instrumental variables – perceived ease of use, usefulness and self-efficacy with respect to the linkage between CSR associations

(i.e. a moral judgment) and behavioral intentions (i.e. intention to use/adopt environmentally responsible electronic services, namely moral intentions). Finally, this study is probably one of the first to examine the role of CSR in electronic services using perspectives from both IS and CSR literature.

From an organizational point of view, the study urges practitioners to take a more finely tuned approach when examining the impacts of CSR initiatives. Our findings suggest that though there is a positive relationship between CSR initiatives implemented in an online context and favorable consumer outcomes, it is likely that this relationship is not that straightforward, in that important technology acceptance predictors are likely to moderate (i.e. strengthen or weaken) the relationship.

The remainder of the manuscript is organized as follows. Section two provides a summary of the pertinent literature, which leads us to identify the research gaps that this study aims to examine, while in section three we build on a number of previously untapped theories by ethical consumerism researchers to help us build our research hypotheses. Next, a presentation of the research methodology will take place, followed by a description of the data analyses and results. The discussion of the results in view of our hypotheses and pertinent literature, along with the implications of our study for both academics and practitioners, proceeds in section six, while the paper concludes with an indication of the limitations of the study, and provides suggestions for future research in the area of ethical consumerism.

Literature review

Utilitarian vs. Social/Environmental Product Features: A Synthesis of Relevant Studies

The majority of studies examining the effects of CSR initiatives either at the product level (e.g. non-chemically based ingredients, proper work conditions, etc.) or at the company level (e.g. donations to charitable organizations, support of local communities, etc.) on consumer attitudes and intentions identify a tension between the importance that consumers place on functional product attributes, such as quality, price, availability, convenience, and image enhancement, and CSR initiatives.

Among the first researchers to identify this tension were Bouldstridge and Carrigan (2000) and Carrigan and Attalla (2001), who, in two qualitative studies, report that although a small number of respondents take company CSR initiatives into consideration during their purchase decisions, the vast majority of respondents would continue to purchase products from companies regardless of the degree to which the companies perform ethically, or even unethically, due to the fact that products sold by such companies are of proven quality, are sold at competitive prices, and can be found easily.

In an effort to provide a more quantitative assessment of this tension, Auger et al. (2003; 2008) used experimental procedures wherein respondents were “forced” to decide between products with varying levels of functional and CSR-related attributes. Their results suggest that unless consumers actively support socially responsible causes (e.g. are members of an organization, such as Amnesty International, that supports a social cause), they are not willing to compromise product quality for the sake of CSR-related product attributes, or pay more for products that are ethically sourced but lack quality. In fact, even socially conscious consumers seem to place a premium on products that are both ethical and of high quality.

In a similar manner, Follows and Jobber (2000) identify two types of consequences, environmental and individual, which act antagonistically (i.e. have opposite effects) on

consumers' environmentally responsible purchase intentions and behaviors. By following a conjoint experimental design (wherein respondents were "forced" to decide between alternative versions of the same product – coffee – with each version varying in terms of its composition of functional and CSR attributes), De Pelsmacker et al. (2005) found that brand name and flavor were the most important product attributes, which were closely followed by the use of a fair-trade label (the CSR attribute). In addition, De Pelsmacker et al. (2005) report that as the fair-trade status increases the price of the coffee from 10% to almost 30%, the consumer preference falls, even among "fair trade likers".

Likewise, Rokka and Uusitalo (2008) used a conjoint experiment to examine the extent to which the "greening" of product packaging (i.e. carton versus plastic) explains consumer preferences in comparison to other product characteristics. Their results suggest that product packaging is the second most important decision criterion after price, with the majority of respondents displaying a preference for green packages over plastic ones. However, when consumers are clustered based on these product attributes, the majority display a primary preference for the non-CSR product attributes, such as price, brand and convenience (Rokka and Uusitalo, 2008).

Shaw et al. (2006) sought to address consumer preferences for sweatshop-free apparel brands (apparel products that are not produced in factories where there is evidence of underage labor, extremely low wages, poor working conditions, etc.). Via a combination of field surveys and telephone interviews, Shaw et al. (2006) report that despite the best of intentions, even ethically minded apparel shoppers (a) have a difficulty finding sweatshop-free products in high-street stores, (b) have to expend significant effort to verify that the products on the market are

indeed sweatshop-free, and (c) are inhibited from buying sweatshop-free apparel due to the average higher price of such products.

In a qualitative study, Belk et al. (2005) demonstrate that, despite expectations, there is no difference across cultures in terms of demographic composition between consumers who do not choose ethical products, and those that do. This finding is supported by the striking similarities between consumer attitudes across six culturally distinct countries with regards to issues relating to ethical products reported by Auger et al. (2007). However, as Eckhardt et al. (2010) observe, there are important cultural differences with respect to the justifications consumers provide regarding their disinterest in the consumption of ethical products. Prominent among these justifications is economic rationalization, which motivates consumers towards disregarding products that do not satisfy their needs in terms of getting “the most value for their money, regardless of their ethical beliefs” (Eckhardt et al., 2010, p. 426).

In a similar vein, Chatzidakis et al. (2007) propose neutralization theory (Sykes and Mazza, 1957) as the psychological mechanism underlying consumers’ efforts to reconcile the gap between their attitudes towards ethical consumption and the fact that, ultimately, the majority of them do not accept a trade-off between functional attributes and CSR-related attributes when contemplating the purchase of fair-trade products. In their face-to-face interviews, Chatzidakis et al. (2007) trace evidence of consumers’ uses of neutralization techniques such as *denial of responsibility* (e.g. respondents felt that they should not be held responsible for the low availability of ethical products on the market), and *denial of injury* (or benefit) (e.g. whether or not it is hard to believe that purchasing ethical products will change the world).

More recently, Öberseder et al. (2011) propose three categories of factors that determine whether consumers will even consider CSR-related product attributes among other product-

related attributes in their purchase decisions. As such, through a series of in-depth interviews, they identify three hierarchically structured types of influencing factors, namely *core* (e.g. information about ethical products and personal concerns), *central* (e.g. the actual monetary resources of a person), and *peripheral* (e.g. company image, credibility of CSR initiatives, and peer-group influence). Finally, Bray et al. (2011) provide novel factors such as consumer moral maturity, inertia, post-purchase dissonance and feelings of guilt, and cynicism as variables contributing to a better understanding of the attitude-behavior gap when it comes to consumer purchase decisions about ethical products.

Utilitarian vs. Social/Environmental Product Features: A Compensatory or Non-Compensatory Relationship?

A closer look at these studies suggests an underlying commonality. All of them approach consumers' decisions towards ethical and less ethical products as a trade-off between functional product attributes (i.e. quality, price, availability, etc.) and CSR-related attributes (i.e. the extent to which the products are genetically modified, environmentally friendly, have been produced by well-paid workers that are not underage, etc.). In other words, these studies assume, purposefully (e.g. Auger et al., 2003; 2008; De Pelsmacker et al. 2005; Rokka and Uusitalo, 2008), or not (e.g. Chatzidakis et al., 2007; Eckhardt et al., 2010; Follows and Jobber, 2000), that these two categories of product attributes are processed by consumers exclusively on an "either/or" basis. For example, consumers are not willing to trade off lower product quality or a higher price for CSR product attributes.

This finding has been confirmed at a corporate level as well, with consumers perceiving both corporate ability (i.e. the ability of a company to develop and make available to the market high-quality products) and CSR efforts as indispensable elements of a successful corporate

strategy, in such a way that low CSR cannot compensate for low corporate ability, and high corporate ability cannot compensate for low CSR (Barone et al., 2000; Folkes and Kamins, 1999; Handelman and Arnold, 1999).

However, Berens et al. (2007) have questioned the exclusivity of this “either/or”, trade-off consumer assessment strategy between functional and CSR-related attributes, and suggest that “in some situations, a good corporate ability can compensate for a relatively poor CSR, and similarly, that in some situations, a good CSR can compensate for a poor corporate ability” (p. 235). In their efforts to identify the conditions under which either compensation or trade-offs between corporate ability and CSR prevail in consumers’ assessments and behavioral intentions, Berens et al. (2007) propose consumers’ degrees of personal relevance of information about corporate ability, and CSR, as two moderating factors. In their extensive empirical study, Berens et al. (2007) find support for their theory, according to which, under conditions of higher personal relevance about corporate ability (CSR), a weak corporate ability (CSR) cannot be compensated by a stronger CSR (corporate ability). In other words, under such conditions consumers employ a trade-off assessment mechanism.

Following Berens et al. (2007), the present study aims to provide additional evidence on the compensatory relationship between utilitarian/functional and CSR attributes of company product offerings within a context that has been largely ignored by ethical consumerism researchers – that of electronic services – while at the same time providing additional boundary conditions with respect to the extent to which consumers use a compensatory or trade-off assessment strategy between functional and CSR attributes. More specifically, while Berens et al. (2007) examine corporate ability as a construct encompassing all functional aspects of a company’s offering which consumers assess in relation to CSR attributes in either a

compensatory or trade-off fashion, we believe that while consumers may assess certain functional attributes in a compensatory fashion to CSR attributes, they may simultaneously assess other functional attributes as trade-offs in relation to the same CSR attributes.

In the next section we provide the rationale for this assertion, and build pertinent research hypotheses.

Research hypotheses

Previous literature has provided some evidence that the association between CSR and important firm outcomes is probably not that straightforward or universal (e.g. Berens et al., 2007; Bhattacharya et al., 2009; Luo and Bhattacharya, 2006; Margolis et al., 2007). According to these studies, the effect of CSR on firm outcomes is likely to be moderated by economic/utilitarian factors or so-called corporate abilities, such as innovativeness capability, product quality, advertising, and R&D. For example, Barone et al. (2000) find that though many consumers are willing to compensate some product performance for CSR, this heavily depends upon judgments of corporate hypocrisy/motivation and the size of the requested trade-off.

Berens et al. (2007) found that when firms do well in terms of quality perceptions, CSR does not significantly affect consumers' attitudes. Luo and Bhattacharya (2009) note the existence of some tension between CSR initiatives and economic-related dimensions, and demonstrate that the expected refund of CSR (i.e. effects on firm's idiosyncratic risk) is conditional upon economic factors, such as advertising and R&D spending. In the same vein, Connelly et al. (2011) suggest that when consumers must choose between product attributes and CSR, CSR generally loses. More recently, Öberseder et al. (2011) note that CSR is hardly ever of prime importance in consumer decision-making, finding that core (e.g. personal concern for the

cause), central (e.g. price) and peripheral (e.g. credibility of the CSR initiative) factors are likely to moderate the effect of CSR on decision-making.

Building on this stream of research, as well as on the IS literature, we examine the tension between utilitarian dimensions and CSR performance in a relatively new context, namely green websites (i.e. web-based ISs that contribute to sustainable business processes (Watson et al., 2008), in shaping beliefs about the environment, and in improving environmental and economic performance (Melville, 2010)). Specifically, we examine whether the positive effect of CSR (i.e. green initiatives) on users' attitudes towards websites is universal, or contingent upon two primarily utilitarian IS factors – namely perceived ease of use (PEU) and perceived usefulness (PU) – and an important utilitarian individual difference variable – namely perceived self-efficacy with technology (SE).

In order to develop formal hypotheses around these moderating effects, we build on Needs Theory (e.g. Herzberg, 1966; Maslow, 1943), Theory of Psychological Distance (e.g. Liberman et al., 2007), and the Technology Acceptance Model (TAM) (e.g. Davis, 1989; Karahanna and Straub, 1999).

Based on needs theory, one could suggest that favorable scores with regards to the functional/commercial factors of PEU, PU and SE satisfy lower-order/hygiene needs, whereas perceptions of CSR performance primarily satisfy higher-order/motivational needs (e.g. self-enhancement and identity-related needs). Therefore, we argue that users will prioritize a website's performance on utilitarian factors over performance on CSR, since the former are arguably more personally relevant than the latter (Berens et al., 2007).

In particular, based on Needs Theory, the expectation is that website users will consider both CSR and utilitarian factors as important when evaluating the website, but will consider poor

performance along the utilitarian dimensions as more threatening to their well-being compared to poor performance in CSR (i.e. the effect of CSR will still be important and positive, but will probably be somewhat decreased). Put simply, when users perceive the focal website to score low with respect to (a) PEU and EU attributes and (b) SE individual difference, they will tend to care less about the CSR performance of the website.

Relevant predictions can be made using theoretical approaches from the literature to the Theory of Psychological Distance and Construal Level Theory (Bar-Anan et al., 2006; Liberman et al., 2007). According to Trope and Liberman (2010, p. 440), “Psychological distance is a subjective experience that something is close or far away from the self, here, and now”. Psychological distance towards an event or object seems to be a function of when the event occurs, where it occurs, to whom it occurs and whether it occurs (i.e. temporal distance, social distance, spatial distance, and hypotheticality) (Trope and Liberman, 2010). The greater an individual’s psychological distance from an event, the greater the likelihood that he will conceptualize this event in an abstract, rather than a concrete, way. According to this stream of literature, reduced psychological distance is usually linked to various positive behaviors, such as increased prosocial behaviors (Hardy et al., 2010) and more acute affect rates and emotional attachment (Malär et al., 2011).

It is possible that psychological distance may play a role when it comes to the relative importance of utilitarian versus CSR dimensions. Arguably, CSR actions are likely to be more psychologically distant when compared to utilitarian factors (e.g. PEU), since they refer to events that are more temporally, socially and spatially distant, and their realization is uncertain (i.e. at the “here and now”, they are just promises). This view can be supported by the argument that utilitarian factors are present in a website user’s direct experience of reality, whereas the

promises of CSR actions are not (Trope and Liberman, 2010). For example, CSR actions take place farther in the future (temporal distance), whereas utilitarian factors are experienced “here and now” (i.e. while the user is browsing, in our case, the e-banking website). Similarly, CSR actions are likely to occur in more remote locations (e.g. reforestation), are more hypothetical, and are primarily perceived using a third-person perspective; that is they refer to others rather than the self (i.e. those in need, the environment).

At this point, it should be noted that, building on TAM (e.g. Davis, 1989; Karahanna and Straub, 1999), predictions for an opposite moderating effect directionality are also tenable, especially for the construct of PU. Specifically, based on TAM perspectives elaborating the content definition of the PU construct, one could argue in favor of a negative, as opposed to a positive, interaction between CSR and PU (e.g. high CSR scores can compensate for low PU scores). In what follows, we elaborate on this theoretical prediction.

IS literature suggests that the perceived usefulness of the IS can encompass a wide array of user goals. For example, by incorporating aspects of Triandis’ (1971) Theory of Interpersonal Behavior in IS use, Chau (1996) demonstrated that perceived IS usefulness comprises two components, “near-term” and “long-term” usefulness, with the former component capturing the immediate results of using the website (i.e. successfully performing banking transactions), and the latter capturing future or broader (not necessarily tied to the IS context) user goals, such as improving their social image and becoming more likable and admired by others.

Moreover, Karahana and Straub (1999) have displayed that perceived use is, to a significant extent, determined by social influence, that is judgments of important others with regards to the contribution of the IS to the fulfillment of critical social issues (i.e. environmental sustainability). Finally, Venkatesh and Balla (2008) further refine and support the social

influences of perceived usefulness by adding, on top of job relevance and output quality (i.e. determinants of near-term usefulness), subjective norms, user image, and result demonstrability (i.e. determinants of long-term usefulness) as the main antecedents of perceived usefulness of IS.

Thus, IS literature clearly suggests that efforts towards greening an IS is compensatory, rather than antagonistic, with respect to its perceived usefulness (i.e. lower levels of PU are compensated by efforts to green the website). In other words, users of a green website who might perceive lower levels of near-term usefulness (i.e. the performance of online core banking services), perceive corporate efforts towards important social issues (i.e. investments into sensitizing e-banking users towards the sustainability mandate) as compensating for low levels of perceived near-term usefulness through the high levels of perceived long-term usefulness.

Similar suggestions about the relationship between the PU and CSR can be made based on psychological distance and construal level theory. Given that CSR actions take place further in the future (temporal distance) and are likely to occur in more remote locations, they appear to be in sync with the “long term” component of PU, which prompts users of the IS application to examine the long term, and the distance implication of using the IS, such as compliance with contemporary subjective norms (i.e. “I am an environmentally conscious citizen”), user image (i.e. “using green websites makes me more likable to others”), and result demonstrability (i.e. “I can easily prove my active support of socially responsible initiatives”).

Based on this discussion, we propose the following:

H1: The utilitarian website evaluative factor of PEU will moderate the positive effect of CSR performance perceptions on attitudes towards the website, in that the relationship will be positive for high levels of PEU, but weakened for low levels of PEU.

H2: The utilitarian website evaluative factor of PU will moderate the positive effect of CSR performance perceptions on attitudes towards the website. Based on the abovementioned opposing theoretical perspectives, we consider the directionality of the moderating effect of PU as tentative, and this will be examined with reference to the data at hand.

H3: The utilitarian individual-level difference factor of SE will moderate the positive effect of CSR performance perceptions on attitudes towards the website, in that the relationship will be positive for high levels of SE, but weakened for low levels of PEU.

Research methodology

Empirical context

According to Watson et al. (2008; 2010) and Melville (2010), a green IS enables environmental sustainability by performing four functions: (a) supporting reductions in energy consumption and CO₂ emissions; (b) providing users with information so that they can make green choices more conveniently and effectively, while shaping their beliefs about the environment; (c) tracking environment-related information; and (d) contributing to financial performance, both for the IS users (such as consumers) and the company.

Web banking services represent an example of consumer-oriented IS with the potential of performing all four green functions. More specifically, web-based banking transactions significantly reduce transportation (environmental and financial costs) and consequently energy consumption for both banking institutions and consumers, thereby facilitating environmental sustainability practices. A study of the banking sector in Germany (Türk et al., 2003) reveals that online, as opposed to paper-based, transactions for approximately 20 million bank accounts in Germany would save 640,000 tons of abiotic raw material (i.e. non-renewable resources). Furthermore, use of web banking services reduces banks' operational costs (e.g. Pikkarainen et al., 2004) and – as mentioned above – provides the opportunity for banks to increase their financial performance by attracting consumers who expect companies to provide products that “are lighter in their environmental footprint over the total life-cycle, including the production and post-use phases” (Sheth et al., 2011) and thereby enable “green” consumption.

However, not every web banking site provides environmental information, shapes beliefs about the environment or tracks environmental (consumption) information (i.e. (b) and (c) above). Within the context of the research presented in this paper, as the basis for empirical research we have selected an international, award-winning web banking site that is acknowledged as a leader in environmental sustainability actions. X¹ bank is a financial institution with an international presence in ten countries (the USA, the UK, Eastern Europe, and the Balkans). X bank is ranked fourth in the local banking market (according to Central Bank data²) in terms of market share (9.3%) among 18 major banks, while during recent consecutive years has received awards for providing the “best e-banking services in the local market”³.

¹ Name of the bank has been removed for blind review purposes.

² Link to Central Bank Data has been removed for blind review purposes.

³ Link with reference to awards has been removed for blind review purposes.

Moreover, the bank's e-banking site (link to bank's e-banking site⁴) was announced at the recent Banking Technology Awards event as the winner of the Green Banking category, and was selected from a number of prestigious international banking institutions (including Lloyds Banking Group, Citi Group, Deutsche Bank, Swiss Credit, etc.). The announcement⁵ indicates that the bank's website meets the requirements for a green website (above criteria (a)-(c)) by "informing and engaging customers in environmentally friendly banking", "cutting wastage and paper costs", and "providing customers [with] online tools for assessing their environmental impact".

In this study, the instrument used for data collection was an online questionnaire. A banner invitation for the bank's web banking users to participate in the survey was added to the home page of the bank's e-banking site. The questionnaire remained online for three weeks, and a total of 847 responses were collected. The introductory question was concerned with the degree of e-banking usage by the respondents. Only those that declared themselves to be users of the e-banking services at least once a month were allowed to proceed to the remainder of the questionnaire. This was important, as we wanted to ensure that they (a) use e-banking services on a regular basis, and as such perceive e-banking as a channel through which to perform a primarily utilitarian activity (Babin et al. 1994); (b) are familiar with the green website activities of X bank, and as such that there would be no need to educate them on such a complex CSR initiative; and (c) can demonstrate varying degrees of technology self-efficacy (i.e. those using the website once per month vs. those using the website on a daily basis).

⁴ Link to bank's website has been removed for blind review purposes.

⁵ Link to the announcement has been removed for blind review purposes.

Thus, after excluding all “non e-banking users” (13 respondents), 834 questionnaires remained for further analysis. This sample consisted of 79% males and 21% females, aged between 25-34 (35%), 35-44 (37%), and 45-54 (14%). The majority of the respondents use web banking services three to six times a week (65%), and 29% of the sample use the services two to four times per month. Post-hoc comparisons with the bank’s total customer base suggest that the sample composition does not differ significantly from the overall figures. Moreover, the sample demographic and usage profile closely mirrors the profile of the local population of web banking users, which consists of 78.8% males and 21.2% females, with the vast majority aged between 25-34 (44%) and 35-44 (30.4%) (AGB Nielsen, 2009)⁶.

Measures

To measure the study constructs, we borrowed measures that have been developed and validated in past research across marketing/CSR and IS domains, and adapted these measures to fit the study’s context. To measure perceived usefulness and perceived ease of use, we adapted the instrument developed by Davis (1989).

The measurement of CSR associations (SN_{IS}) was based on a four-item scale (“Environmental activities differentiate the bank’s e-banking website from the competition”, “The use of e-banking services through the bank’s website reduces paper consumption and protects the environment”, “The bank’s e-banking site is a green website”, “The use of e-banking services through the bank’s website makes consumers more sensitive to environmental protection issues”), which we adapted from the relevant CSR literature (Wagner et al., 2009; Lichtenstein et al., 2004). We measured user self-efficacy with the bank’s e-banking services

⁶ Reference to AGB Nielsen’s data has been removed for blind review purposes

using a single item to capture consumers' perceived familiarity with technology ("I consider myself familiar with technology") (Cassidy and Eachus, 2002). Finally, the measurement of behavioral intentions ($BI_{\text{green IS}}$) was based on a three-item likelihood of use scale adapted from the marketing literature (Cronin et al., 2000) ("How likely is it that you will use the bank's website for your banking transactions?", "How likely is it that you will consider the bank's website as your first choice for electronic banking services?", "How likely is it that you will carry out your banking transactions through the website of another bank, rather than using X⁷ bank's website?").

Analyses and results

The analytical method chosen to estimate the parameters of the proposed model was partial least squares (PLS), a components-based structural equation modeling approach (Ringle et al., 2005). PLS is a powerful technique for analyzing latent variable structural equation models with multiple indicators. The use of PLS is considered appropriate in situations containing small amounts of theoretical information (Fornell and Bookstein, 1982), as is the case in this study. Our study is one of the first to examine complex interactive effects between green websites' environmental sustainability associations, and important predictors of IS acceptance, namely perceived PEU and PU (Venkatesh et al., 2003). PLS estimation makes no distributional assumptions about the sample data, and bootstrap estimates of standard errors were utilized (White et al., 2003).

⁷ The name of the bank has been removed for blind review purposes

Assessments of validity and reliability

The reliabilities of all constructs (CR) are acceptable since they all exceed .70 (see Table 1). A PLS confirmatory factor analysis procedure tested the convergent and discriminant validity (Agarwal and Karahanna, 2000). All items loaded well on their respective factors, which are much higher than all cross-loadings. Importantly, the square root of each average variance extracted (AVE) is much larger than all other cross-correlations, indicating discriminant validity within the stringent test set forth by Fornell and Larcker (1981).

– Table 1 here –

Hypotheses testing results

Figure 1 depicts the regression coefficients and estimated t-values for the main effects model. The model estimates explain a large amount of variance in both $A_{\text{green IS}}$ ($R^2=.42$) and $BI_{\text{green IS}}$ ($R^2=.34$). The variance explained is the main model fit criterion in PLS analysis (Echambadi et al, 2006).

Furthermore, since models yielding significant bootstrap statistics may still be invalid in a predictive sense (Chin and Newsted, 1999), we also employed measures of predictive validity for focal endogenous constructs. One such measure is the Q^2 measure (i.e. the Stone-Geisser test), which is a kind of cross-validated R^2 , representing how well observed values are reconstructed by the parameter estimates of the model (Tenenhaus et al., 2005). The Q^2 values for $A_{\text{green IS}}$ and $BI_{\text{green IS}}$ are .31, and .26, respectively, indicating that the model's predictive relevance is good (Straub et al., 1995; Tenenhaus et al., 2005).

-- Figure 1 here--

The statistical significance results based on 1,000 bootstrap samples (Brown and Chin, 2004) are shown in Figure 1. Given the vast empirical literature on technology acceptance we have not developed formal hypotheses for the main effects of the model. However, we report our empirical findings on these effects below; though tested in a novel context (Green IS), these results are consistent with the current technology acceptance literature. Specifically, $PEU_{\text{green IS}}$ seems to positively related to both $A_{\text{green IS}}$ and $BI_{\text{green IS}}$ ($b=.47, t=15.30$ & $b=.28, t=5.49$), correspondingly). Similarly, $PEU_{\text{green IS}}$ positively relates to $PU_{\text{green IS}}$ ($b=.14, t=4.98$) and $PU_{\text{green IS}}$ is positively related to $A_{\text{green IS}}$ ($b=.07, t=2.78$). However $PU_{\text{green IS}}$ does not seem to be positively related to $BI_{\text{green IS}}$ ($b=.04, t=0.93$). Additionally, as expected, $A_{\text{green IS}}$ positively relates to $BI_{\text{green IS}}$ ($b=.28, t=5.88$) and $SN_{\text{green IS}}$ seems to positively relate to both user outcomes ($b=.27, t=9.84$, for $A_{\text{green IS}}$ & $b=.10, t=2.81$, for $BI_{\text{green IS}}$). Finally, as expected, $SE_{\text{green IS}}$ seems to positively relate to $PEU_{\text{green IS}}$ ($b=.21, t=5.17$), $PU_{\text{green IS}}$ ($b=.19, t=3.22$), $A_{\text{green IS}}$ ($b=.07, t=2.29$), and $BI_{\text{green IS}}$ ($b=.09, t=2.30$).

To test H1, H2 and H3 we entered the multiplicative terms into the linear-only terms model (Ping, 1998). At this point, it should be noted that for all three multiplicative terms, the relevant tests indicate no problems with regards to reliability, convergent and discriminant validity. Composite reliability (CR) for the $SN_{\text{green IS}} \times PEU_{\text{green IS}}$ multiplicative variable is .91 and the AVE equals .48; these are close to or above the widely accepted cut-off values. The square root of the AVE is greater than its correlations with the other variables, indicating discriminant validity. Similarly, composite reliability for the $SN_{\text{green IS}} \times PU_{\text{green IS}}$ multiplicative variable is .92, and AVE equals .60. Both indexes are above the acceptable cut-off values. No discriminant validity problems were detected for the $SN_{\text{green IS}} \times PU_{\text{green IS}}$ multiplicative term, since the square root of its AVE index is greater than its correlations with the rest of the variables included in the

model. Finally, composite reliability for the $SN_{green\ IS} \times SE_{green\ IS}$ multiplicative variable is .88, and AVE equals .66; no discriminant validity problems were detected ($\sqrt{AVE} > \gamma$). To investigate whether the inclusion of the multiplicative terms in the main effects model is empirically meaningful, we used the difference of R^2 values test (Ping, 1998). It was found that the addition of the $SN_{green\ IS} \times PEU_{green\ IS}$ interactive term is empirically meaningful (pseudo f-value=125.4, $p=.00$). Similarly, the addition of the $SN_{green\ IS} \times PU_{green\ IS}$ interactive term into the main-effects model is also empirically meaningful (pseudo f-value=4.34, $p=.038$). Finally, the inclusion of the $SN_{green\ IS} \times SE_{green\ IS}$ interactive term into the main-effects model seems to be empirically meaningful as well (pseudo f-value=4.36, $p=.037$).

The statistical significance results indicate that $PEU_{green\ IS}$ multiplies the effect of $SN_{green\ IS}$ on $A_{green\ IS}$, and therefore H1 is not rejected ($b=.09$, $t=2.17$). Contrary to our predictions, $PU_{green\ IS}$ seems to weaken, rather than multiply, the effect of $SN_{green\ IS}$ on $A_{green\ IS}$ ($b=-.06$, $t=1.96$), and therefore H2 is rejected. Finally, as predicted, $SE_{green\ IS}$ seems to strengthen the effect of $SN_{green\ IS}$ on $A_{green\ IS}$ ($b=.06$, $t=2.23$), and therefore H3 fails to be rejected. Figure 2 depicts the model estimates for the moderated effects model.

-- Figure 2 here--

Discussion and implications

Though there is still a debate on whether CSR is beneficial for organizations, there is an emerging consensus in the CSR literature which suggests that the quest for the so-called business case for CSR should be abandoned altogether. Several studies have suggested that future research should start examining not *whether*, but rather *when* (i.e. under what conditions) CSR is

likely to have strengthened, weakened or even nullified effects on organizational outcomes (e.g. Kiron et al., 2012). We contribute to this literature by theoretically and empirically examining the tension between functional and sustainability attributes in a novel context, namely electronic services.

We build on several theoretical perspectives (Needs Theory, TAM, Psychological Distance Theory) and empirically examine the possibility of moderated beneficial effects of sustainability performance on consumers' reactions. Additionally, the results of the study contribute to the ethical decision-making literature by answering calls for more research on variables that are likely to moderate the moral judgment – moral intentions linkage (see O'Fallon and Butterfield, 2005; Tenbrunsel and Smith-Crowe, 2008) We view a company's engagement in environmental activities as a morally-relevant issue and customers' overall evaluation of the company based on these activities, as a moral judgment. Moreover, we examine whether these context-specific moral judgments can influence context-specific moral intentions (i.e., customers' intentions to adopt environmentally responsible electronic services). Importantly, we examine whether this previously mentioned linkage is moderated (tempered or strengthened) by the existence of three instrumental IS variables. Our findings indicate that the relationship between environmental CSR evaluations (i.e., moral judgments) and green banking adoption intentions (i.e., moral intentions) is probably not that straightforward. Rather, our results provide evidence that important instrumental contingencies (i.e., PEU, PU, SE) may temper or strengthen the effect of moral judgments on moral outcomes. Put differently our results demonstrate that the linkage between moral judgments and moral outcomes is likely to be idiosyncratic. To put these results in perspective consider the example of an e-banking customer visiting an innovative green web-banking web site. Let us further assume that for evaluating this electronic service the customer

views the engagement of the e-bank with environmental initiatives as a moral issue and starts analyzing it applying the popular Doing Ethics Technique (DET) (i.e., an applied critical thinking approach in ethical analysis, where people usually start with questions about the ethical dilemma and conclude with questions about the ethical solution) (see Al-Saggaf and Burmeister, 2012 for more details), then our results indicate that the effect of his/her moral judgments on his/her ethical solutions (i.e., operationalized as intentions towards adopting the green electronic service or not) will *be moderated by* several instrumental contextual variables, like PEU, PU, and SE.

In addition to these theoretical contributions, the study presents important implications for practicing managers. Specifically, our findings suggest that consumers' perceptions regarding the sustainability performance of a green website have the potential to positively influence their attitudinal and behavioral reactions. Thus, managers should recognize that building green website associations relate to consumer attitudinal and behavioral outcomes, and thus should start to longitudinally monitor and enhance these associations using relevant sustainability initiatives. Importantly, and consistent with the contingency approach, we find that this positive relationship is unlikely to be straightforward, in that important technology acceptance predictors (i.e. PEU and PU, SE) moderate the relationship. We find that when the green website scores high in terms of the PEU factor, the positive effect of sustainability initiatives on consumers' attitudes toward the IS becomes stronger. On the other hand, when the green website scores low in terms of the PEU factor, the effect of sustainability initiatives on consumers' attitudes is weakened (see Figure 3)

– Figure 3 here–

These interactive mechanisms reveal that consumers employ a non-compensatory process when evaluating a website, using sustainability and PEU as the evaluative factors. These previously unexplored contingency effects suggest that promises of sustainability initiatives are more likely to be realized when companies take care of the basics of their IS (i.e. designing a website that is easy to use). To put this differently, websites that do well with respect to PEU are in a more advantageous position when deciding to invest in relevant sustainability initiatives, compared to websites that don't do that well on PEU. Therefore, allocating scarce resources to sustainability initiatives when the IS lags behind in terms of PEU is probably not a good idea.

In a similar vein, we found that the individual difference variable of technological SE multiplies the positive effect of sustainability initiatives on consumers' attitudinal reactions towards green websites (see Figure 4). Specifically, as the interactive mechanism empirically indicates, when perceived technological SE is high (i.e. consumers perceive themselves as being more familiar with the use of the website), the positive effect of SN on consumers' attitudes becomes stronger. On the other hand, when SE is low, the effect of sustainability performance on consumers' attitudes is weakened. Arguably, consumers who are not that experienced in the use of web banking services seem to prioritize, and primarily value, the "basics" of a web IS over website-related sustainability initiatives. At this early stage of their relationship with their web banking IS, the focus of these less experienced consumers seems to be on personal performance (i.e. how to get the job done easily and with no mistakes), rather than on how the website performs with respect to environmental and social causes. Managerially, this suggests that the promise of sustainability, in the context of an Internet banking IS, is probably better realized when the target consumer group of the website consists primarily of more experienced web banking users. Given this empirical evidence, rather than launching website-related sustainability

initiatives on a one-to-many basis, managers should consider the use of customization and targeting technologies to communicate their sustainability initiatives (e.g. green website functionalities), primarily to consumers who are experienced in the use of the internet.

--Figure 4 here --

Interestingly, we found a negative interaction effect between PU and SN (see Figure 5). Given opposing but tenable theoretical predictions, we opted not to formally hypothesize a directionality for the interaction effect between PU and SN. Needs Theory and Psychological Distance Theory suggest that efforts towards greening the (e-banking) website would pay off, given that users of the website will perceive it as being useful for accomplishing their goals. However, several theoretical perspectives found in the IS literature (e.g. Triandi's Theory of Interpersonal Behavior in IS use, extended to TAM theory) suggest that efforts to green ISs are compensatory to perceived usefulness (i.e. lower levels of PU are compensated by efforts to green the website).

The results of our study provide empirical evidence in support of the latter theoretical prediction. In other words, users of a green website who might perceive lower levels of near-term usefulness (i.e. performance of online core banking services), perceive corporate efforts towards important social issues (i.e. investments in sensitizing the e-banking users towards the sustainability mandate) as compensating for low levels of perceived near-term usefulness through high levels of perceived long-term usefulness. Therefore, since website users are likely to trade off PU with SN, managers can compensate users' poor satisfaction with the PU with favorable sustainability associations.

Thus, spending on sustainability initiatives is probably a wise strategic choice, especially for websites that do not seem to perform well with respect to PU. Consider, for example, two competing e-banking services, A and B. Imagine also that consumers tend to evaluate service A more favorably than B in terms of near-term usefulness (e.g. due to proprietary/patented technology and hard-to-imitate processes, the first website saves its users time). Based on the results of our study, the manager of e-banking service B can arguably use sustainability initiatives as a strategy to compensate for the lower levels of PU.

--Figure 5 here --

Limitations and suggestions for future research

The study offers several opportunities for further research. First, we tested both the linear- and non-linear model using cross-sectional data, which precludes any conclusions concerning causality between the study's constructs. Another important limitation involves the use of an online survey design without using a sampling frame and random sampling procedures; this introduces coverage and self-selection errors, which in turn lead to problems of sample representativeness. However, in terms of age, gender, marital status and education, the sample is representative of web banking consumers, as indicated by the management team of the web banking IS.

Another limitation relates to the generalizability of the results. Data were collected in close cooperation with one company, which operates within the web banking industry. Although our results are likely to be more relevant to companies operating in the web banking industry, future researchers should further examine our findings in relation to different industries (e.g. tangible goods retailing).

Finally, future researchers should add more moderators to our research model, thus uncovering more boundary conditions to characterize consumer acceptance of green IS. For example, among the most significant individual factors postulated as affecting consumers' perceptions about IS is Technology Readiness (TR) (Tsikriktsis, 2004). According to Parasuraman (2000), TR can be categorized into four distinct components: optimism, innovativeness, discomfort and insecurity. It would be interesting to examine whether technology readiness weakens, strengthens or nullifies the determinacy of IS-related sustainability associations on consumers' attitudinal reactions.

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Table 1: Correlation Matrix, Reliability & Validity Indexes

Constructs	CR	Mean	SN _{green IS}	PEU _{green IS}	PU _{green IS}	A _{green IS}	BI _{green IS}
SN _{green IS}	.91	4.9	.85				
PEU _{green IS}	.93	6.1	.32	.90			
PU _{green IS}	.88	6.7	.11	.26	.88		
A _{green IS}	.92	5.6	.43	.59	.24	.85	
BI _{green IS}	.89	6.3	.32	.50	.20	.51	.89
SE _{green IS}	1.0	6.1	.07	.21	.19	.20	.21

Notes: The diagonal represents the square root of the AVE. Lower diagonal values indicate factor correlations. CR: Composite Reliability

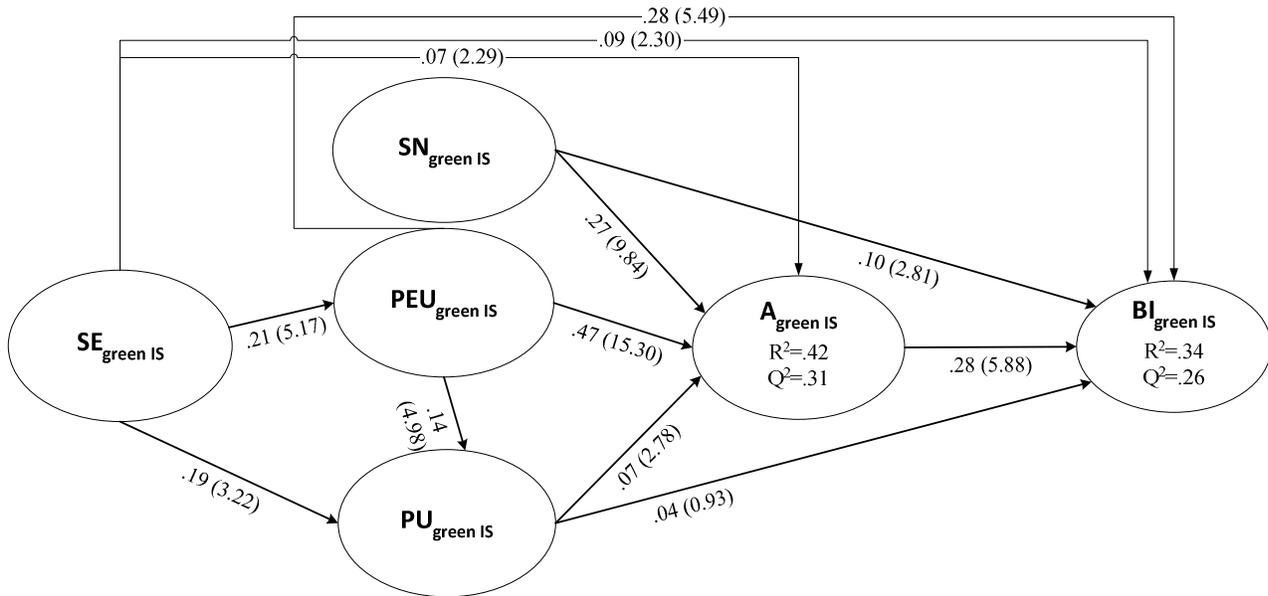


Figure 1: Main-effects empirical model, with results

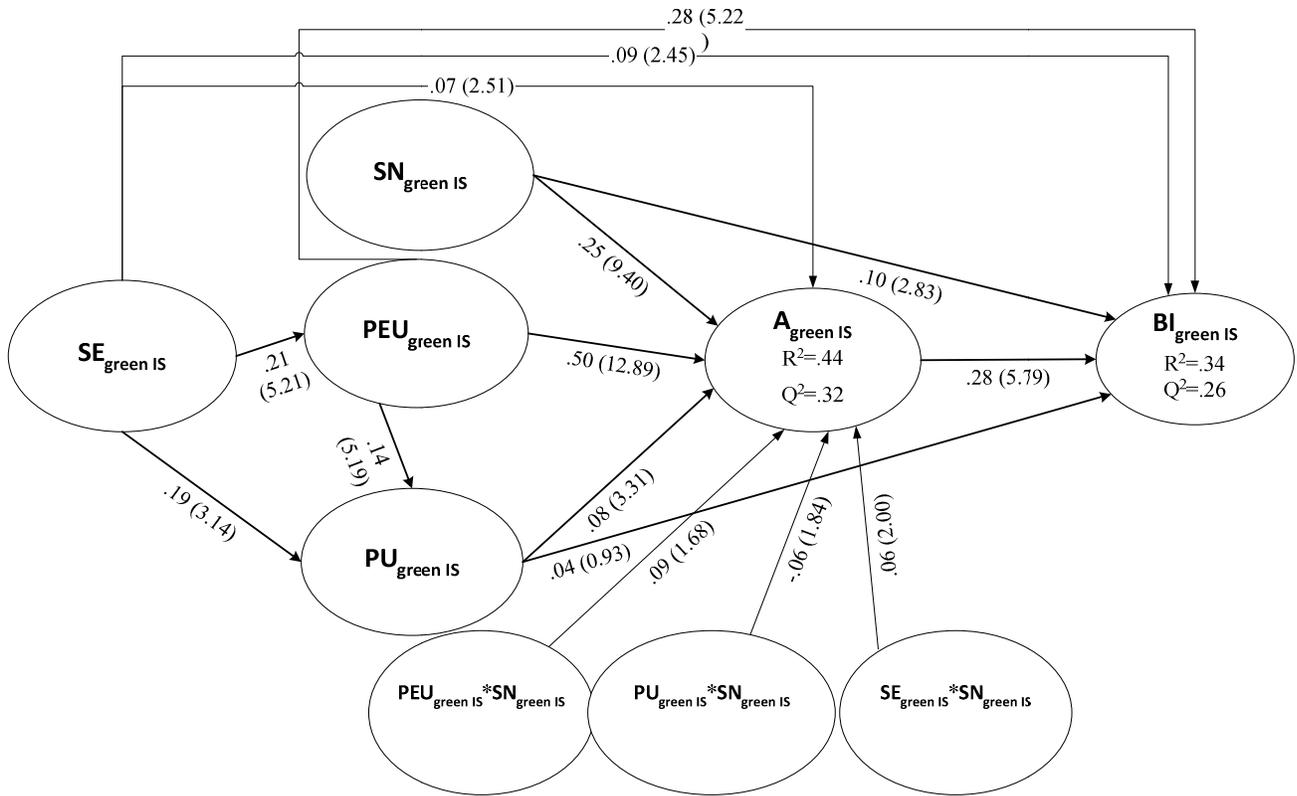


Figure 2: Non-linear empirical model, with results

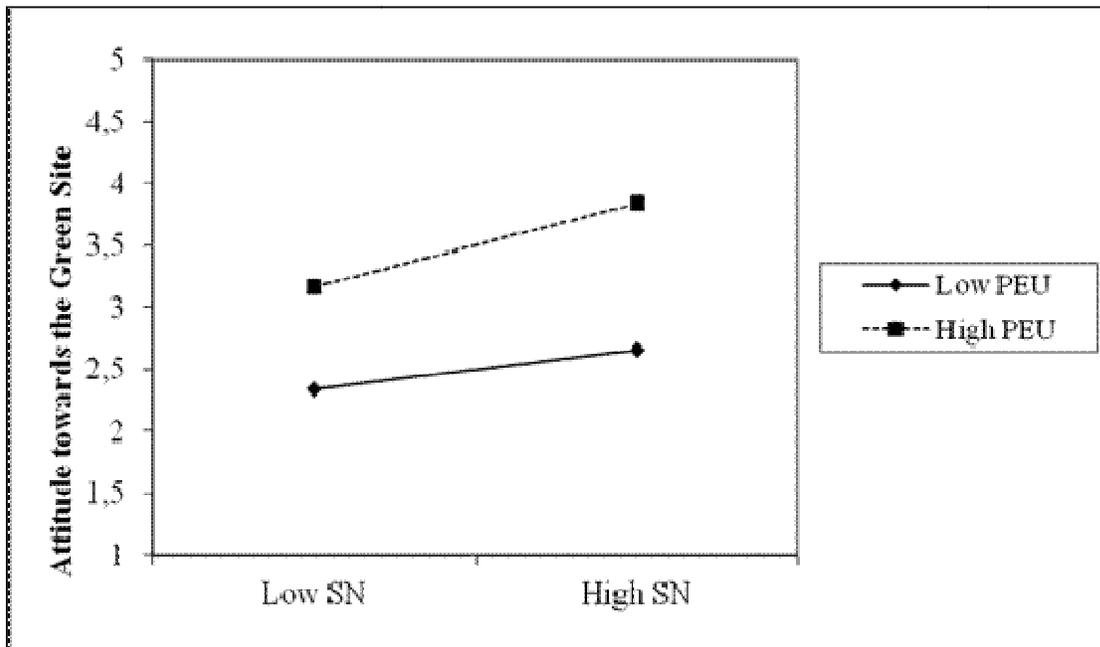


Figure 3: The moderating effect of PEU on attitude towards green IS

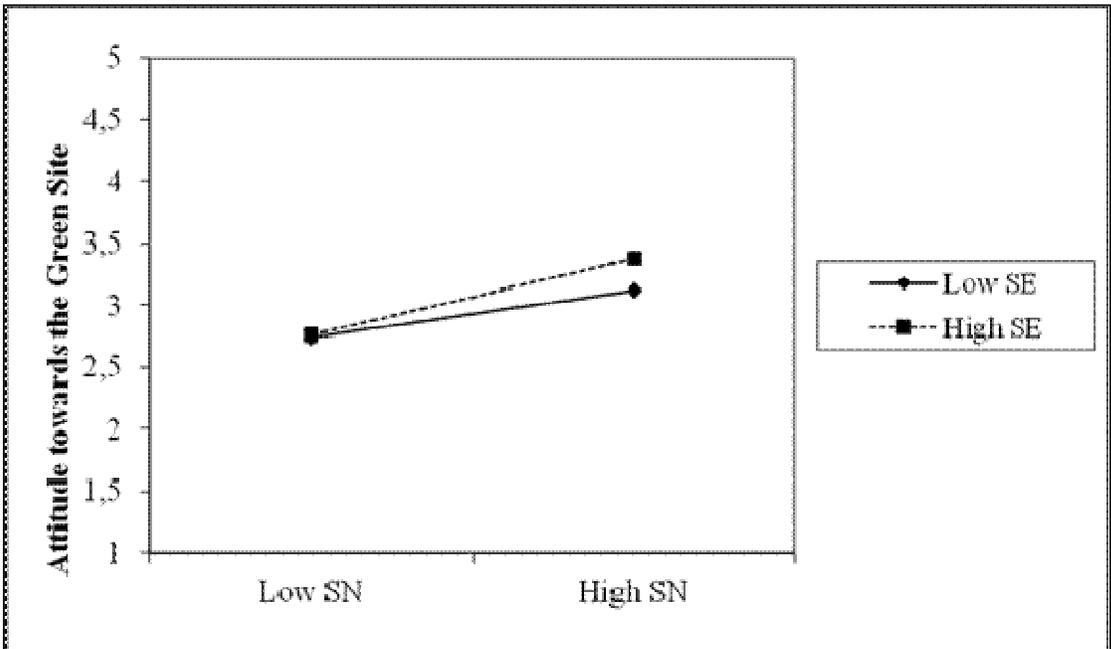


Figure 4: The moderating effect of SE on attitude towards green IS

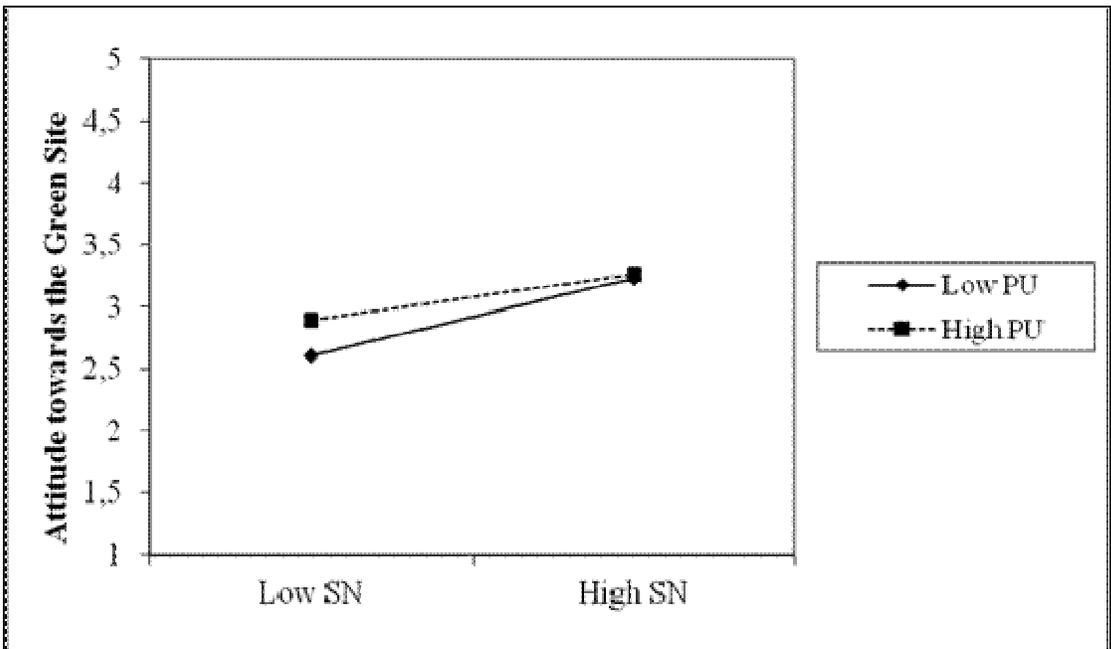


Figure 5: The moderating effect of PU on attitude towards green IS