The role of psychological empowerment in climate-protective consumer behaviour

An extension of the value-belief-norm framework

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Abstract

Purpose – This paper aims to address the role of psychological empowerment in proenvironmental consumer behaviour, focussing on climate protection.

Design/methodology/approach – Study 1 analyses the interaction of the effects of psychological empowerment and personal norms on two environmental behaviours with a sample of 600 individuals drawn form a representative online panel of the Australian population. Study 2 addresses the reinforcing influence of empowerment with a quasi-experimental design comparing 300 consumers of green electricity with 300 conventional electricity clients.

Findings – Psychological empowerment moderates the effects of personal norms on climate-protective consumer behaviour in a value-belief-norm (VBN) framework. Personal norms have a stronger influence for consumers experiencing high psychological empowerment than for disempowered feeling consumers. Furthermore, psychological empowerment experienced as an outcome of actual proenvironmental behaviour mediates the relationship between prior climate protection and future climate-protective intentions.

Research limitations/implications – Future research should focus on the experimental manipulation of psychological empowerment with communicational claims, studying how perceived empowerment can be enhanced.

Practical implications – To promote climate friendly products and behaviours, marketers should use communication claims aimed at enhancing consumer's subjective experience of empowerment.

Social implications – Public policy aimed at climate protection should focus on consumer education increasing consumers' awareness of their potential influence.

Originality/value – Psychological empowerment has not been studied previously as either an antecedent or outcome of proenvironmental behaviour. This is the first study to show that psychological empowerment moderates normative influences on climate-protective consumer behaviour. This research further reveals a novel behavioural reinforcement process, in which psychological empowerment intervenes as a behavioural outcome as well as an antecedent of climate-protective consumer behaviour. Findings contribute to the development of the VBN framework as well as to the consumer-empowerment perspective on proenvironmental behaviour.

Keywords Psychological empowerment, Climate protection, Personal norms, Sustainable consumer behaviour

Paper type Research paper

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Introduction

Addressing global sustainability issues such as climate change requires concerted group action. As a consequence, the motivation of most consumers to engage individually in sustainable consumer behaviour such as energy conservation, limiting car use or switching to green electricity is very limited. Proenvironmental behaviour requires sacrifices and causes individual costs but short- or medium-term benefits are generally lacking. The individual contribution of any consumer does not make a significant impact on the overall state of the environment. Most consumers experience a feeling of disempowerment with respect to global environmental problems which poses a significant limitation to tackling climate change (Barr *et al.*, 2011).

This research addresses the question whether psychological empowerment, that is, the subjective feeling of empowerment, can explain differences in individual motivation to engage in proenvironmental climate-protective consumer behaviour. Can the subjective feeling to actually have "an impact on what happens", to have "the power to change things", motivate consumers to do more for the environment?

The concept of psychological empowerment has been previously studied from a social psychology and organizational perspective (Conger and Kanungo, 1988; Siegall and Gardner, 2000; Spreitzer, 1995; Spreitzer *et al.*, 1999; Thomas and Velthouse, 1990; Seibert *et al.*, 2011). Consumer empowerment constitutes an emerging concept in the marketing literature (Wathieu *et al.*, 2002; Wright *et al.*, 2006). Psychological consumer empowerment refers to consumers' perceived influence on product design and organizational decision-making (Füller *et al.*, 2009). Indeed, recent research has linked growing consumer power and first line employees' psychological empowerment (Yoo, 2017). Increasing perceived customer empowerment has been found to enhance corporate attitudes and purchase intention (Fuchs and Schreier, 2011; Fuchs *et al.*, 2010).

Psychological consumer empowerment has also been proposed as a motivational factor in proenvironmental consumer behaviour (Geller, 1995; McGregor, 2005; Spaargaren and Mol, 2008; Spaargaren and Oosterveer, 2010; Thøgersen, 2005). However, so far, the literature on the role of psychological empowerment in sustainable consumption has been scarce, and, in particular, there has been no prior empirical study on this issue (Leonidou and Leonidou, 2011). At the same time, also green marketing practitioners tend to ignore the potential motivating role of feelings of empowerment (Leonidou *et al.*, 2011; Herbes and Ramme, 2014).

The present research makes two contributions addressing this gap in the literature. First, a theoretical framework is developed which integrates psychological empowerment into the popular value-belief-norm (VBN) model explaining proenvironmental behaviour (Stern *et al.*, 1999; Stern, 2000). VBN theory postulates that personal norms (PN), as part of a sequential order of different variables and effects, determine proenvironmental behaviour intentions. In this research, psychological empowerment is proposed to moderate the effects of PN on climate-protective consumer behaviour. For consumers feeling empowered, the effect of PN on proenvironmental intentions should be stronger than for individuals lacking psychological empowerment. As a consequence, empowered consumers should have a stronger proenvironmental motivation.

The second contribution is to provide evidence that psychological empowerment as a behavioural outcome can reinforce proenvironmental behaviour. Theoretically, the proposition of such an reinforcement process is based on the perspective that psychological consumer empowerment may refer either to a motivational process which induces individuals to engage in behaviour aimed at gaining control over issues that concern them, or to an outcome of such behaviour, or both (Pires *et al.*, 2006). Psychological empowerment

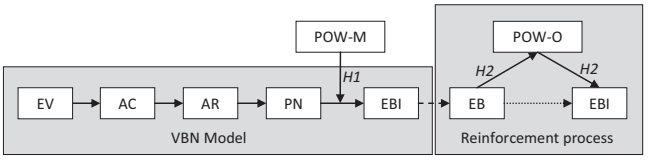
experienced as a consequence of climate-protective behaviour may induce motivational learning effects affecting future behaviour and increase the likelihood of engaging again in such behaviours. Consumers feeling empowered because they have actually exerted proenvironmental consumption choices will also feel more empowered with respect to future choices and be more motivated to engage in future climate-protective consumption behaviour.

Both contributions are based on robust empirical findings across two representative online studies. The first study assesses the proposed model, analysing the interaction of the effects of psychological empowerment and PN on two environmental behaviours with a sample of 600 individuals drawn form a representative panel of the Australian population. Study two addresses the proposed reinforcing influence of empowerment in a quasi-experimental setting comparing 300 residential customers of green electricity with a representative sample of 300 clients of conventional home electricity.

Theoretical framework

The value-belief-norm approach to climate-protective consumer behaviour

Most sustainability-oriented behaviours, including climate-protective behaviours such as energy conservation, limiting car use or paying a premium price for domestic green electricity, cause individual costs but do not provide notable personal benefits at a short to medium term. Proenvironmental motivations have been studied from different theoretical perspectives focussing individually on values, environmental world-views and beliefs, and the activation of norms (Steg *et al.*, 2005). VBN theory of environmentalism (Stern *et al.*, 1999, 2000) proposes a sequential model of proenvironmental behaviour according to which behaviour is motivated by a process comprising a causal chain of environmental values (new environmental paradigm [NEP]), awareness of consequences (AC) and adscription of responsibility (AR) beliefs about general conditions in the biophysical environment and PN related to proenvironmental behaviour (Gardner and Stern, 1996; Stern *et al.*, 1995, 1999; Figure 1). VBN links value theory (Schwartz, 1994; Stern and Dietz, 1994), norm-activation theory (Schwartz, 1972; Schwartz and Howard, 1981, Black *et al.*, 1985), and the NEP perspective (Dunlap and Van Liere, 1978; Dunlap *et al.*, 2000). Drawing on norm-activation theory, VBN proposes that proenvironmental behaviour is induced by environment related PN, that is, the feeling of moral obligation to contribute to environmental protection. PN are in turn activated by the AC of unsustainable behaviour for the environment, other individuals and species as well as oneself (AC beliefs) via AR beliefs, whereby the individual feels a personal responsibility for behaviours that impact in the state of the environment.



Notes: EV: environmental values, AC: awareness of consequences beliefs; AR: adscription of responsibility; PN: personal norms, EBI: Environmental behaviour intentions; EB: actual environmental behaviour; POW-M: psychological empowerment-motivational; POW-O: psychological empowerment-outcome; VBN: Value-Belief-Norm

Figure 1. Theoretical framework

Furthermore, VBN postulates that AC and AR beliefs are shaped by general environmental values as assessed by the NEP measure. A specific characteristic of VBN theory is that the proposed causal chain of variables moves from the more general and stable values to more specific and focused beliefs about the consequences and causes of environmental problems and the individual's personal responsibility in these issues. VBN argues that each variable of the proposed causal chain of effects influences the next variable and may also affect indirectly further variables down the chain. VBN theory implies that, as particular beliefs about consequences (AC) and responsibility (AR) mediate the influence of values on proenvironmental PN, these norms can be influenced by particular information shaping these beliefs. Consumers consequently may be influenced toward a more proenvironmental stance by appropriate normative communication appeals affecting the perceptions of environmental consequences and personal responsibility (Stern *et al.*, 1995).

VBN theory has been successfully applied to a variety of proenvironmental behaviours (Nordlund and Garvill, 2003; Osterhus, 1997). In a direct comparison, VBN has been shown to predict proenvironmental behaviour better than several other theories, even when competing approaches were tested in a combined model (Stern *et al.*, 1999). VBN has also been used as a theoretical framework for the study of the particular case of proenvironmental behaviour related to climate protection, such as the adoption of domestic green electricity. Steg *et al.* (2005) used the framework to predict the acceptability of energy policies aimed at reducing household CO_2 emissions, such as increasing prices of electrical appliances that are not energy efficient and using the revenues to subsidize renewable energy generation, increasing prices of imported and greenhouse vegetables and fruit to subsidize energy-efficient appliances, decreasing prices of green electricity paid for by a tax charged on regular energy or subsidizing prices of local seasonal vegetables and fruit. Their results confirmed the causal order of variables proposed by VBN theory, with the more stable values and beliefs about human–environment relations affecting behaviour-specific beliefs and norms, which in turn motivated support for the energy policies in question. The VBN framework has also been used to explain attitudes towards commercial wind energy generation (Bidwell, 2013). Furthermore, a number of studies related to climate protection have provided partial support for VBN theory. Hansla *et al.* (2008) showed that, consistent with VBN, willingness to pay (WTP) for green electricity was related to AC of environmental problems for oneself, others and the biosphere, and more general values related to the environment. Poortinga *et al.* (2004) showed that acceptability of home and transport energy saving measures, as well as policy support for climate related government regulations, depended on specific environmental beliefs about the consequences of global warming and general values related to the environment (NEP). Participation in a green electricity programme has been found to be motivated by norm activation and values including environmental concern as assess by the NEP scale (Clark *et al.*, 2003; Kotchen and Moore, 2007). Bang *et al.* (2000) found consumer attitude toward paying a price premium for green electricity related to environmental concern and beliefs about consequences of using renewable energy. Ek and Söderholm (2008) found households' choice to pay a price premium for green electricity to be related to NEP and the perceived personal responsibility for climate change. Testa *et al.* (2016) research provided further support for the significant role of PN in energy saving and purchasing of energy saving appliances.

In line with previous VBN-based studies, the present research draws on VBN theory to explain and predict climate-protective behaviour. According to the VBN framework, such behaviour will be directly motivated by specific PN related to climate protection, which in turn are derived from the perception of a personal responsibility in the state of the climate,

that is, AR and awareness of the climate problem and its consequences (AC). These specific beliefs are again derived from more general values related to an environmental orientation.

The moderating role of psychological empowerment in climate protection

The concept of psychological empowerment originated in the social psychology and organizational literature, building on research related to varied discipline areas including alienation, participative management and job enrichment (Blauner, 1964; Hackman and Oldham, 1980; Lawler, 1988; Seeman, 1959). The empowerment construct is widely used in the behavioural and social sciences. Definitions of the concept are however inconsistent, with significant variations even within the same research area (Perkins and Zimmerman, 1995; Wilkinson, 1998). Most earlier research has referred with the term empowerment to a factual increase of employees' power by delegating decision-making authority (Blau and Alba, 1982; Mainiero, 1986). More recently, the empowerment concept has been also addressed as a psychological construct termed *psychological empowerment*. In the management literature, psychological empowerment has been considered a motivational antecedent of behaviour (Conger and Kanungo, 1988) or, more specifically, an increased intrinsic task motivation manifested in a set of cognitions reflecting an individual's work role orientation (Thomas and Velthouse, 1990). These cognitions relate to the fit between work role and one's beliefs, values and behaviours, the belief in one's capability to perform work activities with skill, the feeling of self-determination and the degree to which one feels that one can influence work outcomes. Psychological empowerment can therefore be understood as a motivational construct facilitating proactive behaviour (Carless, 2004; Ergeneli *et al.*, 2007; Liden *et al.*, 2000; Siegall and Gardner, 2000). Individuals who feel empowered perceive that they are competent and can influence their environment. Empowerment reflects an active rather than passive perception of one's work role. Employees' psychological empowerment has been related to such antecedents as *locus* of control, self-esteem, access to information and rewards. The subjective perception of empowerment is derived from having the capacity to initiate and regulate actions and being able to have an impact on the work environment of a given job. Increases in psychological empowerment have been shown to enhance managerial effectiveness and innovation (Siegall and Gardner, 2000; Spreitzer *et al.*, 1999; Spreitzer, 1995), as well as job performance (Chiang and Hsieh, 2012; Seibert *et al.*, 2011). Empowering employee leadership positively affects psychological empowerment, which in turn influences both intrinsic motivation and creative process engagement, increasing creativity (Zhang and Bartol, 2010). Priming feelings of empowerment in an experimental setting induces goal-directed behaviour (Galinsky *et al.*, 2003). Research also has shown that psychological empowerment is an important mediator in organizational relations such as the effect of factual increases in power and authority on subsequent behaviour (Liden *et al.*, 2000; Ozer and Bandura, 1990), the relationship between leadership empowerment behaviour, job satisfaction and affective commitment (Dewettinck and Van Ameijde, 2011), the effect of transformational leadership and active transactional leadership on followers' organizational identification (Zhu *et al.*, 2012), and the link between superiors' participative leadership behaviours and subordinates' task performance and organizational citizenship behaviour towards organizations (Huang *et al.*, 2010).

Introduced by Wathieu *et al.* (2002) as a promising research area, consumer empowerment still constitutes an emerging concept in the marketing literature. Although in 2006, the *European Journal of Marketing* published a special issue titled "Consumer empowerment" (Wright, 2006) providing valuable insights, subsequent empirical research on the topic has been rather scarce and disperse. As in the case of empowerment in

organizational science and social psychology, the term consumer empowerment is also not used consistently and may refer either to actual power exerted by consumers or to consumers experiencing the subjective psychological experience of empowerment. Consumer empowerment from the former perspective refers to the case of educated and confident consumers making informed choices and having as such the ability to influence marketplace activities (Brennan and Coppack, 2008; McGregor, 2005). Frequently, consumers understand their consumption choices as a voting process regarding ethical corporate practices, seeking to engage and influence the suppliers of products and services through their actions in the market place (Shaw *et al.*, 2006). The power relationships between consumers and marketers have been analysed from different perspectives such as consumer sovereignty, the cultural power and discursive power (Denegri-Knott *et al.*, 2006). Indeed, Yoo (2017) showed that consumer power and employees' psychological empowerment are intrinsically related, with front line employee's psychological empowerment mediating the relationship between customer power and the employee's voice behaviour. Consumer access to information can increase consumer power in consumer–supplier relationships. The internet therefore plays an important role in empowering consumers (Harrison *et al.*, 2006; Newholm *et al.*, 2006; Ouschan *et al.*, 2006; Pires *et al.*, 2006), particularly if Web communities and bloggers are involved (Cova and Pace, 2006; Kerr *et al.*, 2012). Labrecque *et al.* (2013) identified four distinct sources for consumer empowerment derived from internet use: demand-, information-, network- and crowd-based power.

Psychological consumer empowerment refers to the consumer's subjective experience of power and authority as part of a motivational process (Davies and Elliott, 2006; Eylon, 1998). While this latter concept of empowerment constitutes a purely psychological construct and differs from the perspective of consumers exerting factual power and authority through their consumption decisions, it is based on the consumer's inner awareness of the fact that he or she has the ability and control of their own choices and the authority to take action (Wathieu *et al.*, 2002). The empowerment experience can be enhanced by providing mood inducing atmospheric stimuli and specific cues and stimuli, including timely and relevant information (Wright *et al.*, 2006). Consumers' empowerment is also strengthened through internet-based co-creation activities (Hoyer *et al.*, 2010), whereby the level of experienced empowerment depends on the design of the applied virtual interaction tool, the related enjoyment of the virtual interaction, the participants' task and product involvement, as well as their creativity and lead-user characteristics (Füller *et al.*, 2009). Consumer education also plays a significant role in consumer's psychological empowerment (McGregor, 2005). Psychological empowerment as a motivational process induces consumers to manifest their needs and wants (Pires *et al.*, 2006). Empowered individuals feel they understand their socio-political environment and experience a sense of control. They also become more active in efforts to actually exert control (Zimmerman and Warschausky, 1998). For instance, as Fuchs *et al.* (2010) showed, customers who are empowered to decide which products should be marketed by a company out of a selection of potential products to be offered, show stronger demand for the selected products, even though they are of identical quality in objective terms. Increasing perceived customer empowerment has also been found to lead to increased levels of perceived customer orientation, more favourable corporate attitudes and stronger behavioural intentions (Fuchs and Schreier, 2011).

In light of the particular characteristics of sustainable proenvironmental consumer behaviour discussed in the previous section, psychological consumer empowerment is likely to constitute a crucial motivational factor in such behaviour. Literature on the role of empowerment in sustainable consumer behaviour has however been scarce so far, and this

topic has not been addressed empirically yet. The result of our literature search is supported by Leonidou and Leonidou's (2011) bibliographic analysis of environmental marketing and management research which did not reveal any study with an empowerment perspective. Also, proenvironmental marketing practitioners tend to mostly ignore the motivational context and the potential role of feelings of empowerment, focussing more on other factors such as normative influences through environmental concern and values. Leonidou *et al.* (2011) content analysis of the green advertising practices of international firms did confirm previous studies identifying product-oriented, process-oriented, image-oriented and environmental fact-based green advertising claims (Banerjee *et al.*, 1995), but did not identify any ads with a green empowerment focus. Also Herbes and Ramme's (2014) comprehensive content analysis of online marketing claims of 480 green electricity providers in Germany which examined 620 products, revealed mostly appeals focused on environmental product attributes, warm glow benefits and nature experiences. The study did however not find any empowerment-related marketing communication appeals. An anecdotal evidence for the lack of green empowerment appeals in the practice stems from the personal experience of one of the authors as member of the expert panel for the selection of the best green energy brand for the CHARGE Energy Branding Awards 2016 (awarded at the CHARGE –Energy Branding Conference, Reykjavik, Iceland, 2016). The brand communication of the brands in contest featured a wide variety of green brand claims, mostly consistent with findings of Leonidou *et al.* (2011) and Herbes and Ramme (2014), but none of the brands appealed at green consumer empowerment.

Several authors have however proposed implications of psychological consumer empowerment for proenvironmental behaviour theoretically. Thøgersen (2005) proposed that consumer policies which increase the experience of empowerment may have a positive effect on consumer's motivation for sustainable behaviour. Similarly, McGregor (2005) argues that consumer empowerment through education that helps people find their inner power and social potential to challenge the status quo should play a significant role in sustainable consumer behaviour. Indeed, the feeling of disempowerment among consumers with global environmental problems constitutes a significant challenge in tackling issues such as climate change (Barr *et al.*, 2011). With the globalization of production-consumption chains and networks, psychological consumer empowerment becomes particularly relevant as a motivational factor in sustainable consumption (Spaargaren and Mol, 2008; Spaargaren and Oosterveer, 2010). From a motivational perspective, the feeling that one's actions "make a difference" may constitute a significant antecedent of proenvironmental behaviour (Geller, 1995).

As discussed in the previous section, sustainable consumer behaviour including climate protection, in contrast to other more self-interest centred consumption behaviours, is strongly determined by non-selfish motives and PN. As PN are a principal antecedent of such behaviour according to VBN theory, it is likely that the effect of psychological empowerment on proenvironmental behaviour takes place through an interaction with normative influences. Indeed, empowerment has been shown in previous research to moderate a number of behavioural influences. For instance, leadership influences on follower's innovative behaviour are moderated by psychological empowerment (Pieterse *et al.*, 2010). Fuller *et al.* (1999) found that psychological empowerment moderated the relationship between transformational leadership and job satisfaction. Psychological empowerment furthermore moderates the influence of role ambiguity/conflict on employee's affective commitment with the organization (Ackfeldt and Malhotra, 2013), as well as the effect of the leader-member-exchange relationship on job outcomes (Harris *et al.*, 2009). The potential role of psychological empowerment as a behavioural moderator has therefore been

well established. The present research proposes that psychological empowerment can also be integrated into VBN theory as a moderator of the effect of PN on proenvironmental behaviour. Indeed, psychological empowerment is a strong candidate for a moderator of the specific relationship between PN and behavioural intentions as proposed by VBN. The degree to which PN will actually drive behaviour will depend on whether the individual perceives that this behaviour will indeed lead to the desired proenvironmental outcome. Individuals feeling disempowered insofar as they believe that their actions will not have an actual effect on climate protection, will experience little proenvironmental motivation, even if their PN are proenvironmental. Empowered feeling individuals, on the other hand, will be motivated to act according to their proenvironmental PN and values. Psychological empowerment as a motivational construct has been shown to facilitate proactive behaviour because empowered individuals feel that they can influence behavioural outcomes (Carless, 2004; Ergeneli *et al.*, 2007; Liden *et al.*, 2000; Siegall and Gardner, 2000). Psychological empowerment induces goal-directed behaviour (Galinsky *et al.*, 2003) as part of a motivational process (Davies and Elliott, 2006; Eylon, 1998). Empowered consumers believe that they have control of their own choices and the authority to take action (Wathieu *et al.*, 2002). Because empowered individuals experience a sense of control and feel that they understand their socio-political environment, they are also more active in efforts to actually shape their environment (Zimmerman and Warschausky, 1998). Experiencing a certain degree of empowerment seems therefore to be a prerequisite for normative influences to result in actual behavioural choices. In the hypothesized theoretical framework, for PN to significantly motivate climate-protective consumer behaviour, the individual should not experience an excessive degree of disempowerment, typical for global environmental problems including climate change (Barr *et al.*, 2011). The more empowered the consumer feels, the stronger should be the motivational influence of PN on behaviour.

The proposed extended VBN model, because of its focus on normative influences is particularly useful to explain sustainable consumption behaviours where individuals make short-term sacrifices to benefit collective interests, such as climate protection, but are less motivated by personal reward. Energy conservation, limiting car use or paying a premium price for green electricity are consumption choices which cause individual costs but lack notable individual short- or medium-term benefits. Instead by individual benefits, such behaviour is rather driven by values and normative influences which are susceptible to the hypothesized moderating influence of psychological empowerment:

H1. The influence of PN on climate-protective consumer behaviour is moderated by psychological empowerment: For consumers experiencing high psychological empowerment, the effect is stronger than for consumers feeling disempowered.

Psychological empowerment reinforcing climate-protective behaviour

Pires *et al.* (2006) argue that psychological consumer empowerment may refer either to a process or an outcome, or both. From a process perspective, psychological empowerment describes a motivational mechanism that induces individuals to engage in behaviour aimed at gaining control over issues that concern them. However, the feeling of empowerment can also be the outcome of actual behaviour through which individuals have exerted control. Becoming active in efforts to exert authority can induce an accompanying feeling or sense of control (Zimmerman and Warschausky, 1998). Psychological empowerment motivates consumers to engage in proactive behaviours, and carrying out these behaviours can in turn lead to consumers experiencing outcome-empowerment (Wathieu *et al.*, 2002). When consumers experience the sensation that their decisions count and that they can change

things through their consumption choices when purchasing a specific brand, they feel more empowered following the purchase, happier with the brand experiences and more likely to engage again with that brand in the future (Hunter and Garnefeld, 2008; Wright *et al.*, 2006). As psychological consumer empowerment is not only limited to a motivational experience but also can be experienced post-behaviour, experiencing psychological empowerment as a consequence of climate-protective behaviour may also induce motivational learning effects affecting future behaviour. As suggested in *H1*, psychological empowerment may constitute an important moderator of normative effects. In addition, experiencing psychological empowerment should also be the consequence, once the individual has engaged in climate-protective activities. For instance, in the pre-purchase stage of the decision to switch to green electricity, a consumer may experience feelings of empowerment, contributing as a positive moderator to the effects of PN on behavioural intentions. Once the individual has actually exerted authority in the marketplace by switching to green electricity, he or she will subsequently experience empowerment as a psychological outcome. In turn, having experienced the gratifying feeling of empowerment as a consequence of actual behaviour will reinforce the positive motivational influence of empowerment on future behavioural choices related to climate protection. Hence, psychological empowerment can be considered an antecedent and experiencing empowerment an outcome of climate-protective behaviour. Thus, if empowerment shows effects as driver and as outcome of behaviour, it describes a reinforcing mechanism. Experiencing psychological empowerment as an outcome of actual behavioural choices should drive future climate-protective behaviour:

H2. Psychological empowerment experienced as an outcome of actual climate-protective consumer behaviour mediates the relationship between prior climate protection and future climate-protective intentions.

Study 1: the moderating effect of psychological empowerment on normative influences

Participants and procedure

Study 1 was conducted to verify the relationships proposed in VBN theory and *H1*. A sample of 600 individuals was drawn from a representative online-panel of the Australian population recruited by commercial online-panel provider Pureprofile. Subjects were selected by a quota-based random criterion to match the population in terms of age, sex, income, education and geographic distribution, and received a monetary compensation for participating in the study (see Appendix for sample characteristics). Participants were presented with an online questionnaire on environmental issues without previous exposure to any information or stimuli. The study addressed two proenvironmental behaviours related to climate protection: WTP a price premium for a residential green electricity contract instead of conventional non-green electricity, and support for a tax on carbon dioxide emissions. The study was conducted in Australia for several reasons. Australia was at the moment of data collection the highest per capita emitter of carbon dioxide emissions worldwide and a heated societal discussion on climate protection and carbon emissions was taking place. A comprehensive governmental green electricity programme was also implemented, offering nearly all domestic clients the opportunity to sign up for government accredited green electricity through their provider at a surplus charge. In addition, there was an ongoing political debate over a tax on CO_2 emissions, which was introduced in 2012, only to be withdrawn again by a new government in 2014. Most participants could be expected to be familiar with the topics green electricity and taxing CO_2 emissions.

Measurement

The questionnaire comprised measures of intention to engage in proenvironmental consumer behaviour related to climate protection, a measure of consumers' experience of empowerment related to his or her potential contribution to climate protection, and further items assessing the different components of VBN theory.

Intentions to engage in climate protection were addressed measuring willingness to pay a price premium for a residential green electricity contract and support for a tax on carbon dioxide emissions. Both measures were adapted from Hansla *et al.* (2008) and Leiserowitz (2006). To assess WTP, participants were asked how much more in addition to their current electricity contract they were willing to pay for a green power plan providing exclusively green electricity from renewable energy sources such as wind, sun, hydro energy, biomass and geothermal energy certified with the official Australian green power label. Subjects had to indicate a price premium added as a percentage to their electricity contract ["How much more (in per cent) would you be willing to pay for green electricity instead of electricity from non-renewable sources?"] Subsequently, support for a tax on carbon dioxide emissions was assessed by asking participants how likely it was that they would support the tax in a hypothetical referendum (popular vote) on this issue. Likelihood of tax support was rated on a five-point scale (*extremely unlikely* = 1 to *extremely likely* = 5).

The measurement of psychological empowerment was based on items extracted from Spreitzer's (1995) and Van Kleef *et al.* (2006) scales which were adapted to the specific case of empowerment related to climate-protective consumer behaviour, as well as on Shaw, Newholm and Dickinson's (2006) perspective of consumption choices as a voting process. In addition, measurement items were contrasted with results from previous qualitative research. Besides several group interviews with undergraduate and graduate students, six in-depth interviews were conducted with individuals who had signed up for green electricity contracts at their homes, paying a premium price for electricity from renewable sources. These subjects were traced by a professional market research institute, received a monetary compensation for participating in the interviews and were selected from six different areas of the city of Melbourne. Interviewees were prompted to elaborate on their feelings elicited by the fact that they had signed up for green electricity contracts in their homes. Most of the interviewees expressed feelings consistent with psychological empowerment, for instance:

> "[. . .] I can do something", "I feel good that I am doing what I can", "you feel that you are making a small difference", "[. . .] doing something that helps", "it does feel good to know that I can do something", "we can do something to change our behaviour, I like to think I am making a contribution", "together we can be quite hefty. So I am doing something really", "I want to leave as low a footprint on the planet as I can".

To assess psychological empowerment, the questionnaire asked participants how acting against climate change would make them feel (for instance, by switching to green electricity, saving energy, or supporting climate policies), and prompted them to indicate how they would feel about the impact that their actions against climate change may have. The measurement items are presented in Table I. Subjects rated their agreement or disagreement with these statements on five-point Likert-type agreement scales (*strongly disagree* = 1 to *strongly agree* = 5). The dimensionality of the scale was analysed with principal component analysis. One single factor was extracted with 87 per cent of explained variance, and factor loadings ranging 0.92 to 0.96. Cronbach's alpha of the scale was 0.96, indicating high scale reliability.

To further test content validity, we additionally assessed a set of emotional reactions related to the feeling of dominance and power which individuals might experience when anticipating proenvironmental behaviour. The following emotional adjective items were

	Factor loadings	Variance
Psychological empowerment (POW)		
Doing something about climate change makes me feel that I'm making a difference	0.93	0.87
Reducing my personal carbon emissions gives me a feeling of power, because my choice as a consumer counts	0.92	
Participating in the reduction of climate change makes me feel I can have an impact on what happens	0.96	
Taking action against climate change makes me feel I have the power to change things	0.94	
Switching to green electricity I feel more powerful because I vote with my purchasing decisions	0.92	
PN		
I feel a personal obligation to do whatever I can against climate change	0.90	0.74
I feel morally obliged to use green instead of non-renewable electricity	0.89	
I feel guilty when I waste energy	0.80	
AR		
Our consumption of fossil energy has led to the climate change problem	0.90	0.60
I feel that I have my part of responsibility for climate change	0.90	
My contribution to global warming and climate change is negligible (*reverse coded*)	0.44	
AC		
Climate change is a serious problem for society	0.95	0.88
Climate change threatens the lives of many humans	0.95	
Climate change will lead to the extinction of numerous animal and plant species	0.92	
Climate change will affect me and my family in the future	0.94	
Environmental values (EV)		
There are limits to growth beyond which our industrialized society cannot expand	0.67	0.54
Humans must live in harmony with nature to survive	0.79	
Humans are severely abusing the environment	0.86	
The balance of nature is strong enough to cope with the impact of modern industrial nations (*reverse coded*)	0.51	
The balance of nature is very delicate and easily upset	0.79	

Table I.
Measurement scales

selected, based on the emotions literature: *important, influential, dominant, significant, strong, powerful, active, vigorous* and *proud* (Bagozzi *et al.*, 1999; Frijda, 1986; Mehrabian and Russell, 1974; Roseman, 1991; Smith and Ellsworth, 1985). Participants were prompted to imagine how acting against global warming and climate change would make them feel and were asked to indicate on five-point unipolar scales ranging *not at* all to *extremely* the extent to which they would experience each of these feelings:

> ("How would acting against climate change make you feel? For instance, by switching to green electricity, saving energy, or supporting climate policies. How would you feel about the impact that your actions against climate change may have? Acting against climate change I would feel [. . .]").

All of these emotional items correlated highly with the psychological empowerment scale, supporting the validity of the proposed measure (Table II).

The components of VBN theory were subsequently measured with items adapted from Stern *et al.* (1999) and Stern (2000) to the specific case of climate protection, as well as from Steg *et al.*'s (2005) scale adapting the VBN components to predicting the acceptability of energy policies (Table I). All scaling items were rated on five-point Likert-type agreement

scales (*strongly disagree* = 1 to *strongly agree* = 5). PN were assessed with three items. Factor loadings ranged from 0.80 to 0.90, explained variance was 0.74 and Cronbach's alpha 0.82. The AC *beliefs* measure comprised four items (factor loadings ranging 0.44 to 0.90; 0.60 explained variance and Cronbach's alpha of 0.65) and the *ascription of responsibility (AC)* measure three items (factor loadings 0.92 to 0.95; explained variance = 0.88; Cronbach's alpha = 0.96). Environmental values were measured on five items of the revised NEP scale (Dunlap *et al.*, 2000). Factor loadings ranged 0.51. to 0.86, explained variance was 0.54 and Cronbach's alpha 0.77.

Results

The first two steps of the data analysis provided support for the application of VBN theory to the two studied proenvironmental consumer behaviours related to climate protection. Bivariate correlation analyses (Table III) confirmed that, as proposed in VBN theory, a chain of causal effects linked WTP a price premium for residential green electricity (WTP_{green}) and support for a tax on CO_2 emissions (CTS) with environmental values (EV), AR beliefs, AC of climate change (AC) and PN related to climate protection. Correlations between variable pairs in the sequential order proposed by VBN were 0.59 (EV, AC), 0.74 (AC, AR), 0.76 (AR, PN), 0.35 (PN, WTP_{green}) and 0.57 (PN, CTS) respectively ($p < 0.001$ in all correlations).

Further sequential multiple mediation bootstrapping analysis with 95 per cent bias-corrected bootstrap confidence intervals using 10,000 bootstrap samples (Hayes, 2013) confirmed that, as proposed by VBN, the different VBN components also exerted an indirect

Table II. Bivariate correlations of psychological empowerment (POW) with power- and dominance-related emotional descriptors – Study 1

Emotion indicator	r (POW)
important	0.60
influential	0.61
dominant	0.48
significant	0.59
strong	0.59
powerful	0.55
active	0.67
vigorous	0.54
proud	0.67

Table III. Variable correlations – Study 1

	WTP_{green}	CTS	EV	AC	AR	PN
WTP_{green}						
CTS	0.33***					
EV	0.12**	0.42***				
AC	0.35***	0.62***	0.59***			
AR	0.29***	0.63***	0.50***	0.74***		
PN	0.35***	0.57***	0.55***	0.71***	0.76***	
POW	0.38***	0.56***	0.48***	0.71***	0.74***	0.75***

Notes: ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; WTP_{green}: Willingness to pay for green electricity; CTS: Carbon tax support; EV: environmental values; AC: awareness of consequences; AR: ascription of responsibility; PN: personal norm; POW: Psychological empowerment

influence on the behavioural variables WTP_{green} and CTS via the corresponding subsequent links in the causal chain of effects (Table IV). Thus, the indirect effect of EV on WTP_{green} and CTS was significantly mediated sequentially by AC, AR and PN (b_{WTP} = 1.36, SE = 0.38, 95 per cent CI [0.69, 2.21]; b_{CTS} = 0.05, SE = 0.02, 95 per cent CI [0.01, 0.10]). In turn, the indirect effect of AC on both dependent variables was mediated by AR and PN (b_{WTP} = 1.26, SE = 0.40, 95 per cent CI [0.49, 2.09]; b_{CTS} = 0.05, SE = 0.03, 95 per cent CI [0.01, 0.11]), and the effect of AR was mediated by PN (b_{WTP} = 4.21, SE = 0.99, 95 per cent CI [2.34, 6.23]; b_{CTS} = 0.28, SE = 0.07, 95 per cent CI [0.14, 0.41]).

The following steps of the analysis addressed the effects of psychological empowerment proposed in *H1*. A series of linear ordinary least squares regression analyses compared the effect of PN on climate-protective behaviour with an alternative model introducing psychological empowerment as a moderator of that relationship (Table V). Results confirmed a significant positive interaction of the effects of PN and psychological empowerment (POW) on WTP_{green} ($b_{PN \times POW}$ = 1.58, SE = 0.54, t = 2.96, p = 0.003) and CTS ($b_{PN \times POW}$ = 0.16, SE = 0.04, t = 4.35, $p < 0.001$). What is more, introducing moderator POW, both models R^2 increased significantly ($p < 0.001$) from R^2 = 0.12 to 0.17 for WTP_{green} and from R^2 = 0.32 to 0.39 for CTS. In presence of the moderator, the individual effects of PN and POW turned non-significant, indicating that the variance of both dependent variables (DVs) was fully explained by the interaction of the two independent variables (IVs).

		DV							
		WTP_{green}				CTS			
IV	Mediators	Indirect Effect	Boot SE	Boot LLCI	Boot ULCI	Indirect Effect	Boot SE	Boot LLCI	Boot ULCI
EV	AC → AR → PN	1.36	0.38	0.69	2.21	0.05	0.02	0.01	0.10
AC	AR → PN	1.26	0.40	0.49	2.09	0.05	0.03	0.01	0.11
AR	PN	4.21	0.99	2.34	6.23	0.28	0.07	0.14	0.41

Notes: 10,000 bootstrap samples for bias-corrected 95% bootstrap confidence intervals; Boot SE = Bootstrap standard error; Boot LLCI = Bootstrap lower limit confidence interval; Boot ULCI = Bootstrap upper limit confidence interval, WTP_{green}: Willingness to pay for green electricity; CTS: Carbon tax support; EV: environmental values; AC: awareness of consequences; AR: ascription of responsibility; PN: personal norms; POW: Psychological empowerment

Table IV. Multiple mediation analysis of VBN components EV, AC and PN on WTP green electricity and CO_2 tax support – Study 1

DV	IV	b	SD	Beta	t	R^2
WTP_{green}	PN	6.07	0.69	0.35	8.80***	0.12
WTP_{green} (M)	PN	−2.33	1.96	−0.13	−1.19	0.17
	POW	−0.30	1.79	−0.02	−0.17	
	PN × POW	1.58	0.54	0.54	2.96***	
CTS	PN	0.78	0.05	0.57	16.08***	0.32
CTS (M)	PN	−0.05	0.14	−0.04	−0.35	0.39
	POW	−0.05	0.12	−0.04	−0.43	
	PN × POW	0.16	0.04	0.69	4.35***	

Notes: ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; M: introducing moderator POW; WTP_{green}: Willingness to pay for green electricity; CTS: Carbon tax support; POW: Psychological empowerment

Table V. Linear regression analysis of interaction effects of PN and psychological empowerment on WTP_{green} and CTS – Study 1

The analysis of conditional effects (Table VI) revealed that at one standard deviation below the mean of moderator POW the effect of PN on WTP_{green} was non-significant (b = 0.76, SE = 1.20, $t = 0.64$, $p = 0.53$). The effect turned significant (b = 2.61, SE = 1.03, $t = 2.54$, $p = 0.01$) at the moderator mean (3.12) and was again significantly higher (b = 4.45, SE = 1.20, $t = 3.70$, $p < 0.001$) at one standard deviation above the moderator mean (4.28). This pattern of effects was very similar for the conditional effect of PN on CTS, with a significantly higher effect at one SD above the moderator mean than at the mean or at one SD below the mean. Results confirmed that, as proposed in *H1*, psychological empowerment significantly moderates the influence of PN on climate-protective consumer behaviour. The higher the consumer's feeling of empowerment, the stronger is the observed effect of PN on intention to engage in climate-protective behaviour.

Study 2: psychological empowerment as a reinforcing mechanism

Study 2 addressed the role of post-behavioural psychological empowerment as a reinforcing mechanism for climate-protective consumer behaviour proposed in *H2*. If psychological empowerment is experienced as an outcome of prior behavioural choices and, at the same time, acts as a driver of future behaviour, then such a pattern of effects would confirm a reinforcing mechanism. Study 2 therefore assesses whether psychological empowerment experienced as a consequence of climate-protective consumer behaviour mediates the relationship between prior behaviour and intentions to engage in consumption behaviour aimed at protecting the climate. The study is based on a sample in which one half of participants are consumers actually signed into a residential green electricity contract and the other half consumers with conventional electricity contracts.

Method

A total of 600 subjects participated in Study 2, divided into two groups of 300 individuals each. The first group of participants consisted of 300 consumers signed into green electricity contracts who were selected through two filter questions out of a representative random sample drawn from the Pureprofile consumer panel of the Australian population. The filter questions assessed first, whether the individual was involved in the choice of the electricity provider at his or her home and, second, if his or her home was signed into a certified green electricity contract. Of the contacted individuals 8 per cent had a green electricity contract. The second group of participants consisted in a representative sample of 300 individuals drawn on random from the same panel following the criteria of Study 1, but discarding green electricity clients (see the Appendix for sample characteristics).

In line with Study 1, the two climate-protective behaviours WTP *for a green electricity* contract (WTP_{green}) and *support for a government tax on carbon gas emissions* (CTS)

Table VI. Conditional effects of PN on WTP_{green} and CTS at values of the moderator POW – Study 1

DV	Values (Mod.)	Cond. effect (B)	SE	*t*
WTP_{green}	1.95 (−1SD)	0.76	1.20	0.64
	3.12 (M)	2.61	1.03	2.54*
	4.28 (+1SD)	4.45	1.20	3.70***
CTS	1.95 (−1SD)	0.27	0.08	3.22**
	3.12 (M)	0.45	0.07	6.42***
	4.28 (+1SD)	0.64	0.08	7.73***

Notes: ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; WTP_{green}: Willingness to pay for green electricity; CTS: Carbon tax support; POW: Psychological empowerment

constituted the dependent variables. CTS was assessed as in Study 1. The WTP measure was nearly identical, with a slightly changed introductory question taking into consideration that 50 per cent of the sample was already signed into a green electricity contract. Thus, participants were asked how much more (in percentage) they would be willing to pay for green electricity instead of electricity from non-renewable sources, if they had to decide *at that moment* about a new electricity contract for their home.

Prior pro-climate consumer behaviour was assessed with the three variables *green choice* (GC), a binary variable identifying participants already signed into green electricity, *recycling* (RC) and *usage of public transport* (PT). Both latter measures were based on proenvironmental behaviour scales in the literature (Roberts and Bacon, 1997; Stern *et al.*, 1993) and consisted in asking participants how often in the past they had "recycled waste or reusable goods" and "used public transport, a bicycle or walked as a substitute for driving a car". The corresponding scales ranged *never* = 1 to *very often* = 5.

Psychological empowerment was measured on a nearly identical measurement scale as in Study 1, with two modifications. First, the introductory question was adapted to the measurement of empowerment as an *outcome* of actual behaviour ("How do you feel about the impact that your contribution to reducing climate change may have?"). Second, on the one hand, the last item "switching to green electricity [. . .]" was removed, because the measure referred to actual behaviour as opposed to intentions and all items had to be rated also by participants that had not actually signed into green electricity, and, on the other hand, because the measure referred to other climate-protective behaviours too, besides green electricity adoption. Factor loadings ranged 0.91 to 0.95, explained variance was 89 per cent and Cronbach's alpha 0.95, confirming again the high reliability of the scale. In line with Study 1, content validity was additionally tested measuring the correlation of the scale with the same set of emotional descriptors assessing feelings of dominance and power. Compared to Study 1, the introductory question was slightly modified to take into account that in Study 2, these emotions were measured as a behavioural outcome ("How do you feel about the impact that your contribution to reducing climate change may have? Thinking of my personal actions against climate change I feel [. . .]"). The psychological empowerment scale again correlated highly with these emotional items with correlations ranging 0.45 to 0.67 ($p < 0.001$ in all correlations), supporting the content validity of the proposed scale.

Results

Bivariate correlation analyses (Table VII) revealed significantly positive correlations ($p < 0.001$) of psychological empowerment with the three prior behaviours green electricity choice (GC), recycling (RC) and public transport (PT), as well as with the intention to engage

	POW	WTP_{green}	CTS	GC	RC
POW					
WTP_{green}	0.30***				
CTS	0.47***	0.26***			
GC	0.35***	0.27***	0.25***		
RC	0.18***	0.04	0.20***	0.12**	
PT	0.20***	0.09***	0.22***	0.09**	0.21***

Notes: ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; POW: Psychological empowerment; WTP_{green}: Willingness to pay for green electricity; CTS: Carbon tax support; GC: Green electricity choice; RC: Recycling; PT: Public transport

Table VII. Variable correlations – Study 2

in future behaviours WTP_{green} and CO_2 tax support (CTS). Indeed, for the half of the sample actually signed into green electricity contracts psychological empowerment (POW) was significantly higher than for the remaining participants with standard residential electricity contracts ($M_{green} = 3.83$, SD = 0.87 vs $M_{standard} = 3.09$, SD = 1.11, F = 79.30, $p < 0.001$).

A series of ordinary least squares linear regression analyses confirmed that all three prior climate-protective behaviours GC, RC and PT significantly enhanced POW, even when introduced together into the regression model, and that POW still had a significant influence on WTP_{green} and TS ($p < 0.001$) when the effect of this variable on both DVs was analysed together with the direct influences of GC, RC and PT (Table VIII). These results are in line with the reinforcing mechanism proposed in *H2*: Psychological empowerment can be the outcome of prior climate-protective behaviour and, in turn, the experience of psychological empowerment as a behavioural outcome can act as a driver of future climate = protective behaviour. This mechanism is further confirmed by mediation bootstrapping analysis with 95 per cent bias-corrected bootstrap confidence intervals using 10,000 bootstrap samples showing that GC, RC and PT exerted a significant indirect effect on both WTP_{green} and CTS, mediated by POW (Table IX). Green choice (GC), that is, being already signed into green electricity, had by far the strongest indirect effect via POW on both WTP_{green} ($b_{WTP} = 4.69$,

Table VIII.
Linear regression analysis of the effects of prior climate-protective behaviour on psychological empowerment and the effects of empowerment and prior behaviour on behaviour intention WTP_{green} and CTS – Study 2

DV	IV	B	SE	Beta	*t*	R^2
POW	GC	0.67	0.08	0.32	8.24***	0.16
	RC	0.16	0.05	0.12	3.05**	
	PT	0.13	0.04	0.15	3.77***	
WTP_{green}	GC	10.27	2.36	0.18	4.36***	0.12
	RC	−1.42	1.45	−0.04	−0.98	
	PT	0.90	0.99	0.04	0.92	
	POW	6.39	1.14	0.24	5.61***	
CTS	GC	0.23	0.13	0.07	1.83[a]	0.25
	RC	0.16	0.08	0.08	2.15*	
	PT	0.16	0.05	0.12	3.02**	
	POW	0.61	0.06	0.41	10.20***	

Notes: ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; [a]$p < 0.10$; POW: Psychological empowerment; WTP_{green}: Willingness to pay for green electricity; CTS: Carbon tax support, GC: Green electricity choice; RC: Recycling; PT: Public transport

Table IX.
Analysis of indirect effects of prior climate-protective behavior on behavior intention mediated by empowerment – Study 2

	DV							
	WTP_{green}				CTS			
IV	Indirect Effect	Boot SE	Boot LLCI	Boot ULCI	Indirect Effect	Boot SE	Boot LLCI	Boot ULCI
GC	4.69	0.95	3.02	6.76	0.50	0.07	0.37	0.65
RC	2.02	0.54	1.11	3.22	0.17	0.04	0.09	0.25
PT	1.46	0.38	0.80	2.31	0.13	0.03	0.08	0.19

Notes: 10,000 bootstrap samples for bias-corrected 95% bootstrap confidence intervals; Boot SE = Bootstrap standard error; Boot LLCI = Bootstrap lower limit confidence interval; Boot ULCI = Bootstrap upper limit confidence interval; WTP_{green}: Willingness to pay for green electricity; CTS: Carbon tax support; GC: Green electricity choice; RC: Recycling; PT: Public transport

SE = 0.95, 95 per cent CI [3.02, 6.76]) and CTS (b_{CTS} = 0.50, SE = 0.07, 95 per cent CI [0.37, 0.65]). As stated in *H2*, indeed psychological empowerment mediates the relationship between prior climate protection and future climate-protective intentions.

Discussion

Findings and theoretical contribution

This research addresses the role of psychological empowerment in proenvironmental consumer behaviour, focussing on climate protection. Study 1 showed that introducing psychological empowerment as a moderator of the behavioural effects of PN into an empirical model based on the VBN framework (Stern *et al.*, 1999; Stern, 2000), significantly increased the predictive power of the model. Findings constitute the first empirical confirmation of previous theoretical proposition in the literature, arguing that psychological consumer empowerment may also play a relevant role as a motivational factor in proenvironmental consumption (Barr *et al.*, 2011; Geller, 1995; McGregor, 2005; Spaargaren and Mol, 2008; Spaargaren and Oosterveer, 2010; Thøgersen, 2005). Psychological empowerment had not previously been studied empirically as either an antecedent or outcome of proenvironmental behaviour. The scarce prior literature on the subject did also not propose integrating empowerment into VBN.

The observed significant behavioural effect of psychological empowerment is in line with the extant literature confirming empowerment as an important antecedent of employee behaviour (Carless, 2004; Chiang and Hsieh, 2012; Seibert *et al.*, 2011; Siegall and Gardner, 2000; Spreitzer *et al.*, 1999; Thomas and Velthouse, 1990; Yoo, 2017) and a motivational factor in consumer decision processes (Fuchs and Schreier, 2011; Füller *et al.*, 2009; Labrecque *et al.*, 2013; Pires *et al.*, 2006; Shaw *et al.*, 2006; Wathieu *et al.*, 2002). In particular, the fact that psychological empowerment moderated normative influences on behavioural intentions supports previous research studying psychological empowerment as a moderator of the relationships between variables such as leadership influences and follower's innovative behaviour, transformational leadership and job satisfaction, role ambiguity/conflict and employee's affective commitment, as well as leader-member-exchange relationship and job outcomes (Ackfeldt and Malhotra, 2013; Fuller *et al.*, 1999; Harris *et al.*, 2009; Pieterse *et al.*, 2010).

Furthermore, results also supported previous findings on the application of VBN to climate and energy-related consumer behaviour, confirming the influences of the different VBN components as well as their causal order, moving from more general environmental values to specific beliefs about human–environment relations and behavioural intentions (Poortinga *et al.*, 2004; Steg *et al.*, 2005; Stern *et al.*, 1999).

Study 2 showed that psychological empowerment was experienced as an outcome of actual proenvironmental behaviours such as being signed into a green electricity contract, recycling or substituting driving a car by using public transport, cycling or walking. Results further confirmed that psychological empowerment experienced as a consequence of climate-protective consumer behaviour mediates the relationship between prior climate protection and future climate-protective intentions, assessed as WTP a price premium for green electricity and supporting a tax on carbon dioxide emissions. Apart from providing support for the proposed empowerment based reinforcement process in climate-protective consumer behaviour, these findings also confirmed the view that psychological empowerment does not only drive behaviour but also is experienced as a an behavioural outcome (outcome-empowerment; Hunter and Garnefeld, 2008; Pieterse *et al.*, 2010; Pires *et al.*, 2006; Wathieu *et al.*, 2002; Wright *et al.*, 2006; Zimmerman and Warschausky, 1998).

Findings contribute to the theoretical development of the literature on both psychological empowerment and sustainable consumer behaviour in two ways. First, by showing that psychological empowerment can be integrated into VBN theory as a moderator of the effect of PN on proenvironmental behaviour, findings contribute to the development of the VBN framework, as well as to the consumer empowerment perspective on proenvironmental behaviour. As results indicate, PN have a stronger influence on behaviour for consumers experiencing high psychological empowerment than for disempowered feeling consumers. Integrating empowerment into VBN has the potential to improve the VBN model. The proposed extended VBN model should enhance the explanation and prediction of sustainable consumption behaviours, particularly when behaviours are concerned where individuals make short-term sacrifices to benefit collective interests such as climate-protective consumption choices which cause individual costs but lack notable short- or medium-term benefits (e.g. energy conservation, limiting car use or paying a premium price for domestic green electricity).

The second contribution of this research is based on the proposition of a behavioural reinforcement process, in which psychological empowerment intervenes both as a behavioural outcome and as an antecedent of behaviour. This perspective is based on the notion that psychological empowerment can be experienced as part of a motivational mechanism that induces individuals to engage in behaviour aimed at gaining control over issues that concern them, as well as an psychological outcome of actual behaviour through which individuals have exerted control (Hunter and Garnefeld, 2008; Pieterse *et al.*, 2010; Pires *et al.*, 2006; Wathieu *et al.*, 2002; Wright *et al.*, 2006; Zimmerman and Warschausky, 1998). Findings of this research contribute to the literature on empowerment by supporting such a mechanism. The proposed reinforcement process has not been addressed previously in proenvironmental behaviour. This research shows that psychological empowerment is experienced as an outcome of actual proenvironmental behaviour, and that experiencing such "outcome empowerment" in turn again motivates the intention to engage in future climate-protective behaviour. Exerting authority in the marketplace by switching to green electricity, for instance, will trigger the experience of psychological empowerment. Having experienced the gratifying feeling of empowerment as a consequence of actual behaviour will reinforce the motivation to engage in behavioural choices related to climate protection in the future. As psychological empowerment constitutes an antecedent and experiencing empowerment an outcome of climate-protective behaviour, that is, empowerment acts both as an outcome and as a driver of behaviour, a reinforcement process is at work. Thus, psychological empowerment as a consequence of actual behavioural choices may induce motivational learning effects that drive future climate-protective behaviour.

Managerial implications

Findings have significant implications for marketers and public policy promoting proenvironmental products and behaviours. Consumers' motivation to engage in proenvironmental behaviours, including product purchase and consumption, is limited by the fact that these behaviours require sacrifices and cause individual costs but lack notable short- or medium-term benefits. This particularly applies to climate-protective consumption behaviours such as energy conservation, limiting car use or paying a premium price for domestic green electricity. Results of this research indicate that for consumers the feeling of empowerment is an important motivational factor driving climate protection because it enhances normative effects on behaviour. Marketers should therefore aim at enhancing consumer's subjective experience of empowerment using marketing communication claims and counter the widespread feeling of disempowerment among consumers with respect to

global environmental problems such as climate change (Barr *et al.*, 2011). Psychological consumer empowerment can be enhanced by providing appropriate cues and stimuli as well as relevant information (Wright *et al.*, 2006), which give consumers the feeling that their decisions count and that they can change things through their consumption choices when purchasing a specific brand (Hunter and Garnefeld, 2008; Wright *et al.*, 2006). As the feeling that one's actions "make a difference" is particularly significant in proenvironmental behaviour (Geller, 1995), marketing communications should highlight the potential impact of each individual consumer's behaviour on climate change. In addition, the subjective experience of empowerment may depend on the decisions made by other consumers (Wathieu *et al.*, 2002), particularly in the case of behaviours, where actual outcomes depend critically on concerted group actions. Psychological consumer empowerment can be increased in such cases, for instance, by providing the information that a large number of other consumers has already switched to green electricity or supported measures against carbon dioxide emissions. Public policy aimed at increasing consumers climate-protective motivation should focus on consumer education helping individuals to develop their social potential to challenge the status quo (McGregor, 2005), increasing consumers' inner awareness of their potential influence (Wathieu *et al.*, 2002).

Limitations and future research

Findings and conclusion should be taken with some caution as this research has several limitations. While the two samples based on representative population panels contribute to the robustness of results, this research is based on an online survey method. As with all survey data, causal relationships can be estimated but cannot be proven empirically. Future research should address the proposed theoretical model with an experimental research method, based on the manipulation of participant's subjective feeling of empowerment. Study 2 approximating a quasi-experimental design based on a sample consisting half of green electricity consumers and half of conventional electricity clients, makes a step in this direction, but falls short of an explicit empowerment manipulation. The measurement of the psychological empowerment variable can potentially be improved, too, particularly the emotional component of that construct. A full-scale development approach is warranted. Furthermore, the assessment of WTP may have a limited reliability. Subsequent studies should intend to use a BDM (Becker–DeGroot–Marschak) measure, that is, an incentive compatible process that reveals WTP more implicitly.

Future research should further investigate the antecedents of green consumer's psychological empowerment and focus on the manipulation of empowerment with communicational claims. How can the perception of empowerment be enhanced without actually increasing the consumer's actual power and influence on issues such as climate change, where the influence of any individual's consumer behaviour is arguably negligible? Previous research has shown that feelings of empowerment can be primed in an experimental setting (Galinsky *et al.*, 2003). Which role can marketing communications play in this context? What type of copy and visuals are appropriate to enhance feelings of empowerment? How do consumers react to information increasing the awareness of the actions of other consumers? Some of the theoretical implications of this research provide promising avenues for future research, too, both from an environmental behaviour perspective and from the study of empowerment. The extended VBN model should be further tested, as well as the empowerment based reinforcement process. Integrating additional antecedents of psychological empowerment may improve the proposed theoretical framework.

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Appendix

Table AI. Sample characteristics

	Study 1		Study 2	
	Frequency	(%)	Frequency	(%)
Gender				
Female	299	49.8	323	53.8
Male	301	50.2	277	46.2
Age				
24-29	58	9.67	63	10.5
30-34	68	11.33	86	14.3
35-39	79	13.17	80	13.3
40-44	70	11.67	73	12.2
45-49	71	11.83	71	11.8
50-54	59	9.83	54	9.0
55-59	55	9.17	58	9.7
60-64	45	7.50	44	7.3
>65	95	15.83	71	11.8
Household income				
$0-$20,000	42	7.0	22	3.7
$20,001-$40,000	76	12.7	86	14.3
$40,001-$60,000	96	16.0	79	13.2
$60,001-$80,000	71	11.8	77	12.8
$80,001-$100,000	73	12.2	84	14.0
$100,001-$120,000	58	9.7	53	8.8
$120,001-$140,000	37	6.2	54	9.0
$140,001-$160,000	34	5.7	26	4.3
$160,001-$180,000	13	2.2	11	1.8
$180,001-$200,000	12	2.0	20	3.3
>$200,000	18	3.0	25	4.2
I prefer not to say	70	11.7	63	10.5
Education				
High School – Year 10 qualification	81	13.5	70	11.7
High School – Year 12 qualification	101	16.8	70	11.7
Tafe/College	172	28.7	183	30.5
University – Undergraduate	149	24.8	141	23.5
University – Postgraduate	79	13.2	116	19.3
Other	18	3.0	20	3.3
Profession				
Full-time employment	287	47.8	293	48.8
Part-time/casual employment	94	15.7	124	20.7
Student	11	1.8	16	2.7
Home duties	58	9.7	52	8.7
Retired	109	18.2	92	15.3
Not currently working	41	6.8	23	3.8
Total	600	100.0	600	100.0

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