UNIVERSITY OF
GLOUCESTERSHIRE

This is a peer-reviewed, final published version of the following document, © 2021 The Authors. European Management Review published by John Wiley & Sons Ltd on behalf of European Academy of Management (EURAM) This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited. and is licensed under Creative Commons: Attribution 4.0 license:

Manika, D., Papagiannidis, S., Bourlakis, M. and Clarke, Richard ORCID logoORCID: https://orcid.org/0000-0002-1060-3142 (2021) Drawing on Subjective Knowledge and Information Receptivity to Examine an Environmental Sustainability Policy: Insights from the UK's Bag Charge Policy. European Management Review, 18 (3). pp. 249-262. doi:10.1111/emre.12453

Official URL: https://doi.org/10.1111/emre.12453
DOI: http://dx.doi.org/10.1111/emre.12453
EPrint URI: https://eprints.glos.ac.uk/id/eprint/11012

Disclaimer

The University of Gloucestershire has obtained warranties from all depositors as to their title in the material deposited and as to their right to deposit such material.

The University of Gloucestershire makes no representation or warranties of commercial utility, title, or fitness for a particular purpose or any other warranty, express or implied in respect of any material deposited.

The University of Gloucestershire makes no representation that the use of the materials will not infringe any patent, copyright, trademark or other property or proprietary rights.

The University of Gloucestershire accepts no liability for any infringement of intellectual property rights in any material deposited but will remove such material from public view pending investigation in the event of an allegation of any such infringement.

PLEASE SCROLL DOWN FOR TEXT.

European Management Review, Vol. 18, 249–262, (2021)
DOI: 10.1111/emre.12453

Drawing on Subjective Knowledge and Information Receptivity to Examine an Environmental Sustainability Policy: Insights from the UK's Bag Charge Policy

Danae Manika,[1] Savvas Papagiannidis,[2] Michael Bourlakis[3] and Richard M. Clarke[4]

[1]Brunel Business School, Brunel University London, Uxbridge UB8 3PH, UK
[2]Newcastle University Business School, 5 Barrack Road, Newcastle upon Tyne NE1 4SE, UK
[3]Cranfield School of Management, Cranfiled Campus, College Road, Cranfield, Bedfordshire MK43 0AL, UK
[4]Newcastle University Business School, Newcastle University London, 102 Middlesex Street, London E1 7EZ, UK

Drawing on the notions of subjective knowledge (what someone thinks he/she knows about a topic) and receptivity (someone's ability, inclination, and willingness to take in information, ideas, impressions or suggestions), we extend the knowledge-attitudes-practice (KAP) model within an environmental sustainability policy (ESP) context: the UK's single-use bag charge policy, specifically. Based on a cross-sectional survey with 568 British participants, we illustrate the key role of objective knowledge for ESP compliance/behavioural intentions, whilst subjective knowledge is key for ESP information receptivity. The need for different marketing tactics to promote 'policy products' for sustainable success is illustrated by identifying three distinct segments: the Knowledgeable and Compliant (first to comply, need to maintain information receptivity); the Unknowledgeable But Compliant (need to reduce subjective knowledge); and the Unknowledgeable, Non-compliant, but Receptive (need objective information the most). Contributing to current and future ESP making, this paper provides multiple avenues for future research.

Keywords: objective/subjective knowledge; information receptivity; compliance/behavioural intentions; environmental sustainability policy; UK single-use plastic bag charge

Introduction

Environmental sustainability and environmental behaviour are issues of growing importance for business management researchers (Ciocirlan et al., 2020; Kok *et al*., 2019), as relevant policies are often utilised to encourage sustainable development (O'Brien and Vourc'h, 2002; Kok *et al*., 2019). Such policies also contribute towards addressing the environmental sustainability challenges faced by society, as the negative consequences of human behaviour have 'escalated, reaching continental or even global magnitude' (Nilsson and Biel, 2008, p. 203). An example of such policy is the UK's single-use bag charge policy, which makes it compulsory for shoppers to pay a small cost (currently 5p) for each single-use carrier bag taken at the point of sale (Poortinga *et al*., 2013). The purchase of a durable 'bag for life' is offered as a reusable and environmentally friendly alternative (Thomas *et al*., 2016). A single-use plastic bag charge can motivate consumers to follow a rational utility maximisation approach to advance economic interests (Hallsworth, 2014), by increasing the likelihood of the purchase and repeated use of a 'bag for life.' thus reducing the use of single-use plastic bags and saving money.

Since the initiation of the current 5p single-use plastic bag charge policy for England in 2015, the UK has seen its sales of single-use plastic bags drop by approximately 90% (DEFRA, 2019). The average person in the UK now buys approximately 10 single-use plastic bags per year as compared to using 140 single-use plastic bags per year before the charge was put in place (DEFRA, 2019). However, with many supermarkets now moving away

Correspondence: Professor Danae Manika. Brunel Business School, Brunel University London, Uxbridge UB8 3PH, UK. E-mail danae.manika@brunel.ac.uk

© 2021 The Authors. European Management Review published by John Wiley & Sons Ltd on behalf of European Academy of Management (EURAM)
This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

from the sale of single-use plastic bags altogether, and instead only offering the 'bag for life' as the default bag at the checkout, some have criticised the policy as it currently stands for increasing the use of the more durable and environmentally costly bags to levels comparable to recent usage of the single-use plastic bags (EIA, 2019). Such unintended consequences indicate the importance of understanding the beliefs, knowledge structures and thought processes behind consumer environmental behaviour, and not just focusing on a single behavioural outcome statistic that might not always tell the full story.

To investigate this rich research area, our study applies the knowledge-attitudes-practice model within an environmental sustainability policy (ESP) context and extends it based on prior knowledge conceptualisations and consumer behaviour (Brucks, 1985; Alba and Hutchinson, 2000; Moorman *et al*., 2004; Manika *et al*., 2018). This is motivated by the premise that public compliance with environmental sustainability policies is not only affected by *objective ESP knowledge* (factually correct information stored in one's memory; Brucks, 1985), as is commonly investigated in environmental sustainability studies, but also, and maybe more so, by *subjective ESP knowledge* (what someone thinks he/she knows about a topic; Brucks, 1985). In addition, research is also needed to examine the concept of *receptivity* (someone's ability, inclination, and willingness to take in information, ideas, impressions or suggestions) as an additional behavioural outcome from ESP compliance. This is because receptivity is closely interlinked with information seeking or encountering (active (goal-driven) or passive (unexpected discovery) information seeking, respectively (Erdelez, 1999; Wilson, 2000). The more receptive the public is, the more likely it is that the ESP initiatives will lead to a sustained long-term solution to waste reduction and not just the short term following of a policy for economic reasons.

By tackling the above research gaps, this paper contributes to the business and environmental sustainability management literatures, by drawing on the notions of *subjective knowledge* and *receptivity*, to understand public compliance with ESP in the context of the UK's single-use bag charge. More specifically, the following research questions are addressed:

RQ1. How does objective versus subjective ESP knowledge affect ESP attitudes, ESP information receptivity and compliance intentions?
RQ2. Do consumers cluster together in terms of their ESP-related objective and subjective knowledge, attitudes, receptivity and compliance intentions?

The first research question investigates the main theoretical extension of this study, taking into account subjective knowledge and receptivity, whereas the second one has relevance to informing the long-term practices of environmental sustainability policies by identifying consumer segments that may have different knowledge, attitudes, receptivity and intentions and, hence, they may need different marketing tactics to promote 'policy products' for sustainable success.

The following section considers relevant prior literature and develops hypotheses. After outlining the adopted methodology, the findings and discussion sections present the empirical evidence and discuss them within the context of extant literature. Our paper concludes by considering the theoretical and practical contributions of our research and future research avenues.

Literature review

Environmental sustainability policies

Policies define a set of rules related to a target audience (Laroche *et al*., 2001), focusing on the audience's responsibilities and the consequences of violations (Bulgurcu *et al*., 2010; Lim and Schoenung, 2010). Without acceptance and compliance, an environmental policy cannot help to solve problems, which is why motivating the public to accept and comply with a policy is important and has received a great deal of attention (Nyborg *et al*., 2006; Yazdanmehr and Wang, 2016). Determinants of ESP acceptance and compliance include media coverage and portrayal of the importance of the issue, intrusion level, beliefs and alternatives, orientation and ideology, familiarity and awareness, country and culture (Owens, 2000; Aschemann-Witzel *et al*., 2016), and they vary depending on target behaviour, the type of intervention, and respondent characteristics.

Etzioni's (1975) *compliance theory* approach to the structure of organisations, which could also be applied to governmental policy contexts and public compliance, suggests that there are three types of control commonly used to promote compliance: coercive (threats and punishments; negative reinforcement strategy), remunerative (economic incentives; positive reinforcement strategy), and normative (symbolic and moral reasoning) controls to motivate compliance (Pfeffer and Salancik, 2003). The single-use plastic bag charge policy utilises the coercive and normative controls to motivate compliance within the context of waste reduction. Waste reduction is 'among the key environmental policy objectives that most OECD governments have been pursuing over the past three decades'(O'Brien and Vourc'h, 2002). More specifically, the environmental impacts of plastic bags have been gaining increasing attention as a long-term problem worldwide (Ritch *et al*., 2009; Thomas *et al*., 2016). Internationally, there has been an increase in norms associated with disposable

© 2021 The Authors
European Management Review published by John Wiley & Sons Ltd on behalf of European Academy of Management (EURAM)

carrier bags, seen as an environmental hazard threatening life and the environment, resulting in banning or restricting the use of disposable plastic bags through various policy initiatives (Poortinga *et al*., 2013). Such restrictions have led to a reduction in plastic waste (Convery *et al*., 2007).

As with similar initiatives, ensuring stakeholder and consumer acceptance is central to the successful implementation of the single-use plastic bag charge (Convery *et al*., 2007). The initial success of the policy in reducing the number of bags used (Thomas *et al*., 2016) (even though results varied in studies based on the size of the charge, the length of time the charge was in effect, and whether or not the customer or retailer paid the charge (Ritch *et al*., 2009)) has been explained through multiple theoretical lenses. These include among others: economic theory, focusing on benefits and costs (Convery *et al*., 2007); habit discontinuity, focusing on habit replacement (Verplanken *et al*., 2008); cognitive dissonance, focusing on reducing discrepancies between attitudes and behaviour; self-perception theory, focusing on diminishing the attitudes-behaviour gap while taking environmental self-identity into account (Poortinga *et al*., 2013); and learning theory, focusing on the probability of the reoccurrence of a behaviour that yields positive consequences (Jakovcevic *et al*., 2014). The acceptance of ESP initiatives, beyond that of the bag charge policy, such as sustainable transportation (Nordfjærn and Rundmo, 2019), sustainable diets (Mørk *et al*., 2017) and energy saving (Gadenne *et al*., 2011) policies, have also indicated a similar need to examine and understand the antecedents of ESP-related behaviour change.

The knowledge-attitude-practice model

To examine our research questions, we ground our investigation on the knowledge-attitude-practice (KAP) model of behaviour. The KAP model is often used to explain the role of knowledge and attitudes in health or environmental behaviours. Within the model, knowledge is often widely defined as a set of understandings, insights or thoughts acclimatised through association, learning or investigation (Hiew *et al*., 2015). According to Anastasi (1976), an attitude is often defined as a tendency to react favourably or unfavourably towards a designated class of stimuli (Bhuvaneswari and Padmanaban, 2012, p.10886), attitude cannot be directly observed but must instead be inferred (Ch, 2006). The KAP model proposes that accumulated knowledge in, for example, a health aspect initiates changes in attitude, and results in gradual behaviour change (Hiew *et al*., 2015). This in turn implies that people who are convinced when they obtain specific knowledge will change their attitude and start practising behaviour change (Kollmuss and Agyeman, 2002; Baranowski *et al*., 2003).

KAP surveys are often used as a quantitative method with predefined questions and standardised questionnaires to reveal misconceptions or misunderstanding, which could act as barriers to behaviour change (du Monde, 2011). While knowledge is a logical prerequisite to the intentional performance of a behaviour, the KAP model has received criticism in the past due to the weakness of the suggested relationships across the literature (Launiala, 2009). Baranowski *et al*. (2003) argue that the knowledge concept, as it is typically used within KAP research, is often not well specified and, for example, spans additional psychosocial aspects of behaviour change, such as behavioural skills, risk perception and self-efficacy. Médicins du Monde's (2011) KAP tool also acknowledges as a limitation of the model and tool that there may be a difference between what someone says and what someone does, as the KAP is grounded on opinions rather than facts.

However, the KAP model is still one of the most popular theoretical frameworks within the behaviour change arena and is relevant to the research questions of this study. Specifically, in this study, we apply the KAP model within an ESP context, and we address some of the model's shortcomings by distinguishing between: objective and subjective ESP knowledge, based on Brucks (1985); and behavioural and information receptivity intentions, based on Golden and Stanaland (2000). In other words, related to the latter, we extend the KAP model to advance prior knowledge in the business and environmental sustainability management arena. Below we review relevant literature to find evidence of the importance of this extension.

Objective and subjective knowledge conceptualisations

Consumer behaviour researchers often differentiate between factually correct knowledge someone has and the assessment of their knowledge, that is, how much they think they know. The term *objective knowledge* is used to refer to what is actually stored in one's memory (whether that is correct or not). Consumer behaviour researchers often use an objective knowledge test (Rudell, 1979; Brucks, 1985) to measure objective knowledge on a given topic, by examining the number of correct answers given by an individual. The greater the number of correct answers on the objective knowledge test, the greater the amount of accurate factual information on a given topic an individual has. *Subjective knowledge* is used to refer to what consumers perceive that they know (Brucks, 1985). Consumer behaviour researchers often measure subjective knowledge, by asking individuals to self-report on how much they think

© 2021 The Authors

they know about a given topic on a Likert scale (e.g., 1 = Nothing to 7 = A lot).

According to Moorman *et al*. (2004), objective and subjective knowledge are unique constructs with unique measures and influences, although on average they are positively correlated (Carlson *et al*., 2009). Distinguishing between the two is important, as consumers might think they know more than they actually do, often called 'Miscalibration,' which has been found to have an impact on their behaviour (Alba and Hutchinson, 2000). Subjective knowledge has been found to be more important than objective knowledge (Moorman *et al*., 2004; Manika and Golden, 2011) for behaviour change.

The impact of objective knowledge and subjective knowledge on information search (Johnson and Russo, 1984; Brucks, 1985), and information processing and decision-making (Brucks, 1985; Raju *et al*., 1995), has been investigated widely within traditional consumer behaviour contexts. However, research on the distinction between objective and subjective ESP knowledge and their effects on ESP compliance/behavioural intentions within an environmental sustainability context has been scant. The KAP model also fails to take this distinction into account, often relying on only measuring the factually correct knowledge someone has, which then drives attitudes and practice/behaviour; while ignoring how much individuals think they know.

Information receptivity and pro-environmental behaviour intentions

In addition to extending the KAP model by distinguishing between objective knowledge and subjective knowledge, in relation to the *knowledge* construct of the framework, we also distinguish between two behavioural outcomes within an ESP context which have not been explicitly integrated in prior accounts of the KAP model, relevant to the *practice* construct of the framework. Aside from examining pro-environmental behaviour or compliance intentions, we take into account the notion of information *receptivity,* to extend the KAP model and answer our research questions.

Information receptivity could be classified as another behavioural outcome related to information seeking or encountering, that is, active or passive information seeking, respectively (Erdelez, 1999; Wilson, 2000). Information receptivity is the extent to which an individual is open to information about an issue, which can come from internal or external sources (Golden and Stanaland, 2000), and this is important to consider as it goes beyond passive information exposure and includes personal sources of information (Manika and Golden, 2011). Dissonance theory supports the notion that individuals actively avoid information that could be potentially dissonant from their beliefs, knowledge, attitudes and behaviours (Brock *et al*., 1970). Also, individuals prefer information that they are unfamiliar with (i.e., low knowledge) and perceive as useful, rather than familiar and non-useful information (Brock *et al*., 1970). In addition, consumers tend to find information that is consistent with their knowledge when searching for information (Moorman *et al*., 2004).

Overall, receptivity is an important concept to study, especially within the context of environmental sustainability polices, which may change or become updated. The construct of receptivity also extends the KAP Model and is also relevant to the distinction between objective and subjective knowledge based on prior consumer behaviour literature.

Conceptual model and hypotheses

Many of the previously noted ESP studies, including studies on the bag charge policy specifically, which assess policy effectiveness (Thomas *et al*., 2016) have mostly focused on attitudinal and behavioural outcomes – the *attitude* and *practice* constructs of the KAP model, while failing to consider the constructs of *subjective knowledge* (relevant to the k*nowledge* construct of the KAP Model) and *receptivity* (as an additional *practice* construct of the KAP Model), specifically. This paper draws on these two latter concepts to advance the business and environmental sustainability management literature and answer the aforementioned research questions by extending the KAP model within an ESP context.

Attitudes have been found to mediate the knowledge–behaviour gap, evidencing the KAP model (Baranowski *et al*., 2003), which is our overarching framework grounding our hypotheses. The KAP model posits that knowledge gain can lead to attitude formation or change and/or behavioural practice, with often positive associations found between the constructs of knowledge, attitudes and behaviour/practice (Kollmuss and Agyeman, 2002; Baranowski *et al*., 2003).

Prior consumer behaviour studies also suggest that the distinction between objective and subjective knowledge has had varying results on attitudes and behaviours (Brucks, 1985; Moorman *et al*., 2004; Manika *et al*., 2018). Based on the KAP model, we expect that both objective and subjective knowledge types will have an impact on attitudes in a positive way. Factually correct information about a policy will enhance the likelihood of forming favourable attitudes towards that policy, while also the more someone thinks he/she knows about a policy, the more likely they are to form favourable policy attitudes. This is because people want to hold consistent attitudes with their knowledge, based on the KAP model. Hence, based on the aforementioned, we hypothesise that:

© 2021 The Authors
European Management Review published by John Wiley & Sons Ltd on behalf of European Academy of Management (EURAM)

H1 a. Objective ESP knowledge and **b** subjective ESP knowledge have a positive and significant relationship with ESP attitudes.

The same is hypothesised for the relationship between objective and subjective knowledge types and behaviour. The more factually correct knowledge someone has, the more likely s/he will be able to understand the importance of the behaviour and hence be motivated to act. Hence, based on the KAP model, we hypothesise that:

H2 a. Objective ESP knowledge and **b** subjective ESP knowledge have a positive and significant relationship with ESP compliance/behavioural intentions.

The gap between knowledge and behaviour (Sligo and Jameson, 2000) is addressed by the attitudinal mediator of the KAP model. Favourable ESP attitudes are more likely to lead to compliance/behaviour/practice (i.e., intentions to bring a reusable carrier bag instead of paying the 5p charge) and hence, we hypothesise that:

H3 ESP attitudes have a positive and significant relationship with ESP compliance/behavioural intentions.

As previously argued, the KAP model also ignores the construct of information receptivity as another outcome variable. In line hypotheses H1 to H3 and based on the KAP model we expect that objective knowledge and subjective knowledge will have positive and significant relationships with information receptivity. Golden and Stanaland (2000) examined the relationship between objective knowledge and information receptivity within a non-traditional consumer behaviour context and found that objective knowledge begets knowledge. Hence, individuals with high objective knowledge want to continue to be knowledgeable, and thus are more likely to be receptive than less objectively knowledgeable consumers. Similarly, Manika and Golden (2011) found that the more individuals think they know, the more they want to know and hence they are receptive to information. These studies, in addition to the KAP model, support our hypothesis that:

H4 a. Objective ESP knowledge and **b** subjective ESP knowledge have a positive and significant relationship with ESP information receptivity.

We also expect that H3 will also hold for information receptivity, as an additional outcome variable based on the KAP model. Thus, we hypothesise that:

H5 ESP attitudes have a positive and significant relationship with ESP information receptivity.

All the above hypotheses aim to answer RQ1 by modelling the relationship between the relevant variables (Figure 1). As expanded upon below, *environmental self-identity*, *personal norms*, *convenience beliefs*, and *past behaviour* are controlled for throughout the model.

Environmental self-identity, the extent to which people see themselves as someone who acts in an environmentally-friendly way, is related to environmental preferences, intentions and behaviour (Van der Werff *et al*., 2013). These include eco-shopping, waste reduction, water savings, domestic energy conservation (Whitmarsh and O'Neill, 2010), and recycling, buying fair trade products and not flying on holidays (Gatersleben *et al*., 2002). Self-identity reflects how one sees one's self and is conceptually different from values, which are general and abstract, while self-identity mediates the relationship between values and intentions (Van der Werff *et al*., 2013). Poortinga *et al*. (2013) examined the effectiveness of the policy on uptake of own bag usage in Wales and found that changes in self-reported

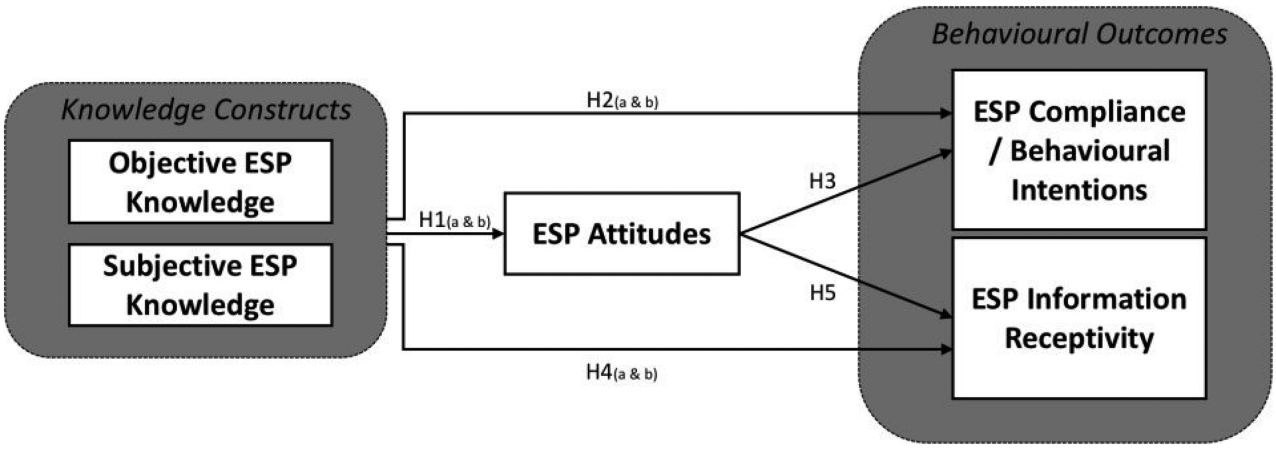

FIGURE 1 ESP-related knowledge-attitude-practice conceptual model and hypotheses. *Note*: ESP (environmental sustainability policy).

© 2021 The Authors
European Management Review published by John Wiley & Sons Ltd on behalf of European Academy of Management (EURAM)

environmental self-identity as a result of the policy implementation could produce positive spill-over effects in the longer term and hence it is important to account for these effects in the examination of the extended policy-related KAP model relevant to our RQs.

Nilsson and Biel (2008) also found that policy acceptance related to climate change measures is related to environmental values (relevant but different to self-identity) mediated by personal norms. The norm activation model (NAM) and the value-belief-norm (VBN) theoretical models regard environmental behaviour as an outcome of personal norms, defined as the degree to which one feels morally obliged to perform a certain action (Schwartz, 1973), and it reflects feelings of moral obligation to behave in an environmentally-friendly way (Steg *et al*., 2014; Papagiannakis and Lioukas, 2018). Personal norms affect behaviour in many pro-environmental behaviour contexts, such as conservation behaviour, recycling, travel mode choice, car use and environmentally friendly consumption/buying (Thφgersen, 1999; Bamberg and Schmidt, 2003; Klöckner and Matthies, 2004; Brekke *et al*., 2010).

Lastly, convenience beliefs and past behaviour related to the single-use bag charge policy are taken into consideration as controls for the behavioural outcomes examined. Past studies on such policies note that one of the most common barriers to behaviour compliance is the inconvenience of taking your own carrier bags when going shopping (Lewis *et al*., 2010). Also, given that this is an existing policy and the public may have already complied with it, past behaviour is also taken into account as a control. This is important as some researchers claim that a certain knowledge is acquired from experience, which may influence behaviour and sometimes is even considered as a distinct knowledge type from objective and subjective knowledge (Brucks, 1985).

The constructs of the extended KAP model are also used to examine how individuals may cluster together based on their ESP knowledge, attitudes and behaviours (RQ2). By doing this, we seek to identify the best ways to communicate environmental policies to the public and ensure acceptance and compliance in the longer term.

Methodology

Procedures and participants

A cross-sectional study was conducted with 568 participants, residing in England. Participants were recruited through a consumer panel company. Participants were asked questions and they self-reported their environmental identity, personal norms, convenience beliefs, past behaviours, knowledge, attitudes, information receptivity and compliance intentions related to the bag charge policy, within a supermarket context. The exact questions related to these concepts can be seen in Table 2.

Our sample was in line with methodological guidelines for partial least squares (PLS) and structural equation modelling (SEM) using SmartPLS (Hair *et al*., 2011). This methodology was used to examine the relative relationships in the model illustrated in Figure 1, in line with previous studies within the environmental sustainability arena (e.g., Ciocirlan *et al*., 2020). The sample was specified to have an approximate balance between participants from all regions of England, and a balance between genders. The breakdown of participants by region and gender can be seen in Table 1, in addition to other demographic characteristics.

Measures

Existing scales from prior literature were used for all measurement items and assessed on 1–7 Likert scales (Table 2). Prior to the main data collection, the items' psychometric properties were examined via a pre-test ($N = 50$).

Subjective knowledge was measured with the use of a five-item scale adapted from Flynn and Goldsmith (1999). This was followed by an objective knowledge scale based on ten multiple-choice items adapted from the UK Department for Environment, Food & Rural affairs website page entitled: 'Carrier bags: why there's a charge' (DEFRA, 2018). Each question was coded as 1 for a correct answer and as 0 for a false answer or 'I do not know.' Correct answers were summed for each participant, which gave a total score from 0 to 10. Attitudes were measured by nine items from a combination of two scales: Bansal *et al*. (2005) and Nysveen *et al*. (2005). Information receptivity was measured via three items (Golden *et al*., 1996) and compliance intentions via five items (Chandran and Morwitz, 2005). In regards to the behavioural controls, environmental self-identity was measured via three items from Van der Werff *et al*. (2013), personal norms were measured by three items adapted from Yazdanmehr and Wang (2016), frequency of past policy-related behaviour (bringing a carrier bag, instead of paying the 5p charge) was measured based on the multiple choice scale of Vagias (2006) and convenience beliefs were based on three items adapted from Wagner *et al*. (Wagner *et al*., 2009). These controls are important because they shed extra light on the key behavioural issues in relation to the context under consideration.

Measurement model and common method bias

The measurement model performed satisfactorily, with acceptable (as per Hair *et al*., 2011; Antonetti and

© 2021 The Authors
European Management Review published by John Wiley & Sons Ltd on behalf of European Academy of Management (EURAM)

TABLE 1 Sample demographics

Demographics		*N*	*Percentage*
Region	North East	55	9.7%
	North West	70	12.3%
	Yorkshire and the Humber	60	10.6%
	East Midlands	56	9.9%
	West Midlands	61	10.7%
	East of England	56	9.9%
	London	69	12.1%
	South East	78	13.7%
	South West	63	11.1%
Gender	Males	299	52.6%
	Females	269	47.4%
Age category	18 to 24	36	6.3%
	25 to 34	80	14.1%
	35 to 44	89	15.7%
	45 to 54	143	25.2%
	55 to 64	126	22.2%
	65 +	94	16.5%
Marital status	Single	151	26.6%
	Married	267	47%
	In a partnership	86	15.1%
	Separated or Divorced	49	8.6%
	Other	8	1.4%
	Prefer not to specify	1	.2%
	Missing	6	1.1%
Household income	Under £15,000	119	21%
	£15,000–£24,999	127	22.4%
	£25,000–£34,999	92	16.2%
	£35,000–£44,999	82	14.4%
	£45,000–£54,999	40	7%
	£55,000–£64,999	28	4.9%
	£65,000–£74,999	12	2.1%
	£75,000 and over	25	4.4%
	Prefer not to specify	37	6.5%
	Missing	6	1.1%
Education	GCSE's	177	31.2%
	A-Levels (or equivalent)	181	31.9%
	Bachelor's Degree	114	20.1%
	Master's Degree	37	6.5%
	Doctorate Degree	14	2.5%
	Other	39	6.9%
	Missing	6	1.1%
Employment status	Full-time employed	245	43.1%
	Part-time employed	78	13.7%
	Out of work (looking for work)	26	4.6%
	A homemaker	45	7.9%
	A student	10	1.8%
	Out of work (not looking)	6	1.1%
	Retired	116	20.4%
	Unable to work	36	6.3%
	Missing	6	1.1%

Manika, 2017) composite reliability (above 0.82) and average variance extracted (above 0.61) scores (see Table 2). The Fornell-Larcker (1981) criterion is also respected (see Table 3; Antonetti and Manika, 2017). VIF values below 2.04 and tolerance levels above 0.49 also illustrate no evidence of multicollinearity. Overall, these results suggest discriminant validity.

In terms of common-method-bias (CMB), randomised scales were used, while participants were reminded about the confidentiality and anonymity of their responses frequently (Podsakoff *et al*., 2003; Antonetti and Manika, 2017). To examine potential CMB we used two methods. A Harman single factor test was first used (as per Antonetti and Manika, 2017). Results indicate that one factor explains 36.91% of the variance, while two factors explain 55.79% of the variance. Second, a marker variable [I prefer warm colours (i.e. containing yellow and red) over cold colours (i.e. containing blue)' was added to the survey to test for CMB (Bagozzi, 2011). Correlations between the constructs and the marker variable illustrated no significant results. Partial correlations were also run between constructs, using the marker variable as a control. The results did not change as a result of the marker variable.

Findings

Examining subjective knowledge and receptivity (RQ1)

The hypotheses are tested using a partial least square structural equation modelling approach (PLS- SEM due to the exploratory nature of the study (Hair *et al*., 2011; Antonetti and Manika, 2017), which has also been previously used in business management scholarship (Ciocirlan *et al*., 2020). SmartPLS version 3.0 is used with 5,000 bootstrap resamples (Hair *et al*., 2011; Antonetti and Manika, 2017).

Figure 2 presents the structural model results (including the behavioural controls). In relation to H1, both (a) objective and (b) subjective ESP knowledge had positive and significant relationships with ESP attitudes. Hence, H1 was supported. However, objective and subjective ESP knowledge did not affect both behavioural outcomes. Specifically, objective ESP knowledge had a positive and significant relationship with only ESP compliance intentions (i.e., supporting H2a but not H2b), while subjective ESP knowledge had a negative and significant relationship with only ESP information receptivity (i.e., not supporting H4a or H4b). Hence, H2 was only partially supported for objective knowledge, while H4 was not supported for either (a) objective or (b) subjective knowledge). H3 and H5 were supported, as ESP attitudes had positive and significant relationships with both behavioural outcomes: compliance intentions and information receptivity, respectively. Convenience beliefs, self-identity and personal norms had positive and significant relations with receptivity, while past behaviour had a negative and significant relationship with this behavioural outcome. On the other hand, past behaviour and personal norms had a positive and significant relationship with compliance intentions, while convenience beliefs had a negative one. Environmental

© 2021 The Authors

TABLE 2 Psychometric properties of measurements

Construct	*Items*	*Loadings*	*AVE, CR,VIF, & tolerance*
Objective ESP knowledge	Ten-item test based on UK Department for Environment, Food & Rural affairs website page entitled: 'Carrier bags: why there's a charge' (DEFRA, 2018)	n/a	Tolerance = 0.81 VIF = 1.23
Subjective ESP knowledge	I do not know very much about the single-use plastic bag charge policy.	0.79	AVE = 0.72
	I know very little or nothing at all about the single-use plastic bag charge policy.	0.92	CR = 0.93
	I do not feel very knowledgeable about the single-use plastic bag charge policy.	0.82	Tolerance = 0.61
	Compared to most other people, I know less about the single-use plastic bag charge policy.	00.86	VIF = 1.62
	When it comes to the single-use plastic bag charge policy, I really do not know a lot.	0.85	
ESP attitudes	Describe your attitude towards the single-use plastic carrier bag charge policy:	0.91	AVE = 0.81
	Bad:Good		CR = 0.97
	Foolish:Wise	0.92	Tolerance = 0.66
	Harmful:Beneficial	0.94	VIF = 1.51
	Unpleasant:Pleasant	0.83	
	Unfavourable:Favourable	0.92	
	Negative:Positive	0.92	
	Useless:Useful	0.93	
	Dislike:Like	0.89	
	Irritating:Not irritating	0.86	
ESP information receptivity	I wish I knew more about the single-use plastic carrier bag charge policy.	0.94	AVE = 0.91
	I want more information on the single-use plastic carrier bag charge policy.	0.95	CR = 0.97
	I wish I had more information on the single-use plastic carrier bag charge policy.	0.97	Tolerance = 0.67 VIF = 1.45
ESP Compliance/ behavioural intentions	Describe your intentions to bring your own carrier bags when going to the supermarket instead of paying 5p per single-use plastic carrier bag:	0.96	AVE = 0.84 CR = 0.96
	Unlikely:Likely		Tolerance = 0.49
	Improbale:Probable	0.90	VIF = 2.04
	Impossible:Possible	0.88	
	Uncertain:Certain	0.92	
	No Chance:Certainly	0.92	
ESP-related convenience beliefs	Not bringing my own carrier bags when going to the supermarket makes it more convenient.	0.91	AVE = 0.66
	Paying 5p per new single-use plastic carrier bag makes me save effort when going to the supermarket.	0.70	CR = 0.96 Tolerance = 0.65
	Paying 5p per new single-use plastic carrier bag is easier than bringing your own carrier bags when going to the supermarket.	0.82	VIF = 1.53
ESP-related past behaviour	How frequently do you bring your own carrier bags, instead of paying the 5p charge per single-use plastic carrier bag at the supermarket?	n/a	Tolerance = 0.73 VIF = 1.37
Environmental self-identity	Acting in an environmentally-friendly manner is an important part of who I am.	0.92	AVE = 0.83
	I am the type of person who acts in an environmentally-friendly manner.	0.91	CR = 0.93
	I see myself as an environmentally-friendly person.	0.89	Tolerance = 0.70 VIF = 1.43
ESP-related personal norms	I feel morally obligated to bring my own carrier bag when I go to the supermarket instead of paying 5p per single-use plastic carrier bag.	0.77	AVE = 0.62 CR = 0.83
	I feel guilty if I do not bring my own carrier bag when I go to the supermarket instead of paying 5p per single-use plastic carrier bag.	0.69	Tolerance = 0.56 VIF = 1.77
	I am willing to put extra effort into remembering to bring my own carrier bag when I go to the supermarket instead of paying 5p per single-use plastic carrier bag.	088	

Note: Subjective knowledge items were all reverse coded; ESP (Environmental Sustainability Policy).

self-identity did not have a significant relationship with compliance intentions.

Our model's antecedents explain a moderate amount of variation (R^2 = 52.6%) in policy compliance/behavioural intentions and a lower amount of variation (R^2 = 33.7%) in policy-related information receptivity. Attitudes had an R^2 of 14.4%. The results indicate that the predictive power of our model is acceptable (Antonetti and Manika, 2017). In addition, Q^2 values are acceptable for all endogenous constructs (i.e., higher than zero).

Mediations postulated by our model were examined using an ordinary least squares regression approach to path analysis (Hayes, 2012) and 'indirect effects estimated using the PROCESS macro for SPSS and the calculation of 95% confidence intervals using bias-corrected and accelerated bootstrap and 5,000 resamples' (Antonetti and Manika, 2017, p. 981). The average of the items is used for the analysis, while also taking into account the controls. All direct effects are consistent with the hypotheses presented and tested through PLS-SEM.

© 2021 The Authors
European Management Review published by John Wiley & Sons Ltd on behalf of European Academy of Management (EURAM)

TABLE 3 Correlations and the Fornell–Larcker criterion

	ESI	*OK*	*SK*	*CB*	*PB*	*PN*	*ATT*	*IR*	*BI*
ESI	**0.91**								
OK	0.21**	**1**							
SK	0.14**	0.33**	**0.85**						
CB	−0.11**	−0.19**	−0.47**	**0.81**					
PB	0.16**	0.22**	0.27**	−0.40**	**1**				
PN	0.49**	0.24**	0.19**	−0.25**	0.37**	**0.78**			
ATT	0.32**	0.32**	0.29**	−0.28**	0.37**	0.48**	**0.90**		
IR	0.24**	−0.07	−0.38**	0.30**	−0.11**	0.20**	0.07	**0.95**	
BI	0.27**	0.31**	0.31**	−0.41**	0.61**	0.45**	0.51**	−0.04	**0.92**

Notes:
** $p < 0.01$;
* $p < 0.05$; Bold numbers on the diagonal indicate the root square of the AVE.
ESI (Environmental Self-Identity); OK (Objective Knowledge); SK (Subjective Knowledge); CB (Convenience Beliefs); PB (Past Behaviour); PN (Personal Norms); ATT (Attitudes); IR (Information Receptivity); BI (Behavioural Intentions).

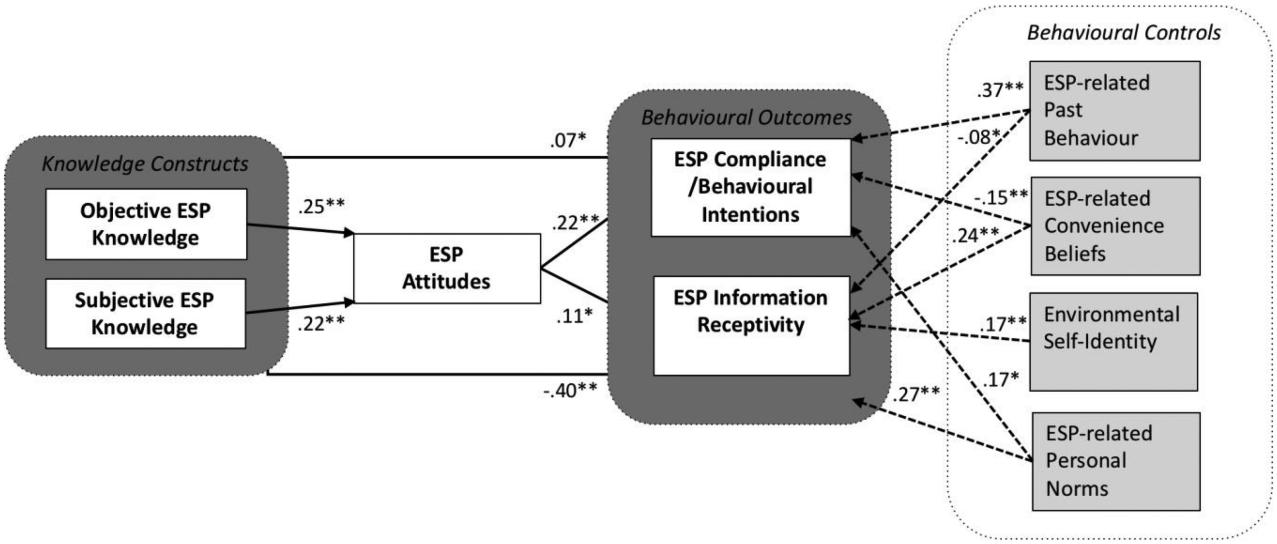

FIGURE 2 PLS-SEM results: Examining H1 to H3. *Notes*: ** $p < 0.01$; * $p < 0.05$; Figure 2 shows only significant paths; ESP (environmental sustainability policy).

Policy attitudes partially mediated the relationships between: objective ESP knowledge and ESP compliance/behavioural intentions (0.02, CI = 0.01 to 0.04); and subjective ESP knowledge and ESP information receptivity (0.01, CI = 0.01 to 0.04). Taken together with the PLS-SEM results, it is evident that the extended ESP KAP model is vital in understanding policy outcomes.

Segmenting consumers into appropriate clusters (RQ2)

The variables included in the clustering analysis were the extended ESP KAP model variables as per Figure 1 (including the controls). We chose a hierarchical clustering algorithm along with the cubic clustering criteria based on Sarle (1983) and Ward's (1963) algorithm to determine the appropriate number of clusters (Milligan and Cooper, 1987), ensuring the formation of 'mutually heterogeneous and internally homogeneous clusters in the sense of the least error sum of squares' at each step (Homburg *et al*., 2002, p. 48). The clustering variables were first standardised (i.e., z-scores) to limit the sensitivity of the procedure to outliers. We repeated the analysis for 10 subsamples to reduce the potential influence of sampling variance (Homburg *et al*., 2002). Each subsample included two-thirds of the observations. The results indicated a cluster solution with three groups. We then conducted a series of t-tests to compare the clusters based on the variables depicted in Figure 1.

The numerical (means and standard deviations) and verbal descriptions (compared to the means of the overall sample) of the identified clusters can be seen in Table 4.

© 2021 The Authors
European Management Review published by John Wiley & Sons Ltd on behalf of European Academy of Management (EURAM)

TABLE 4 Description of Clusters

Variables	*Cluster 1 (n = 273)*	*Cluster 2 (n = 176)*	*Cluster 3 (n = 80)*	*Overall Sample (n = 568)*[a]	*Range*
	Knowledgeable and Compliant (Environmentalists)	*Unknowledgeable But Compliant (Non- Environmentalists)*	*Unknowledgeable, Non-compliant, But Receptive*		
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*	
Objective ESP Knowledge	5.06 (1.88) *higher*	3.11 (1.81) *lower*	3.25 (3.06) *lower*	4.19 (2.09)	1–10
Subjective ESP Knowledge	5.47 (1.11) *higher*	4.53 (1.19) *lower*	3.26 (1.32) *lower*	4.83 (1.39)	1–7
ESP attitudes	6.47 (.69) higher	4.17 (1.46) *lower*	4.28 (1.74) *lower*	5.39 (1.63)	1–7
ESP i nformation Receptivity	3.52 (1.50) *lower*	3.35 (1.43) *lower*	4.77 (1.48) *higher*	3.66 (1.53)	1–7
ESP compliance/ behavioural intentions	6.80 (.41) *higher*	5.59 (1.35) *lower*	4.65 (1.71) *lower*	6.07 (1.34)	1–7
Environmental self-identity	5.58 (.99) *higher*	4.62 (1.03) lower	5.14 (1.24) lower	5.19 (1.13)	1–7
Personal norms	5.97 (.84) *higher*	4.41 (1.36) *lower*	4.59 (1.54) *lower*	5.26 (1.37)	1–7
Past behaviour	5.81 (.51) *higher*	5.47 (.93) *higher*	3.18 (1.77) *lower*	5.31 (1.29)	1–6
Convenience beliefs	2.22 (1.11) *lower*	3.17 (1.17) *higher*	5.03 (1.31) *higher*	2.93 (1.50)	1–7

[a] *Notes*: Only 529 participants were included in the 3 identified clusters, 39 participants did not fit the clusters indicated based on standardised items to eliminate outlier bias.

Note: The Table includes the verbal description of the cluster per variable based on whether or not it is lower or higher than the overall sample average. Cluster 1 and 2 had significant differences across all variables depicted in the table, except for information receptivity, where there were no differences. Clusters 2 and 3 had significant differences in all variables depicted in the Table except for objective knowledge, attitudes and personal norms. Clusters 1 and 3 had significant differences in all variables. Due to length restrictions these results are not presented here but can be provided upon request.

ESP (environmental sustainability policy).

We refer to each cluster with a representative label as they highlight empirically distinct aspects of each relationship connector for each cluster. We identified three segments: the *Knowledgeable and Compliant* (and according to this policy context, environmentalists), who know and think they know a lot about the policy, have positive ESP attitudes and are willing to continue to comply, which is also in line with their environmental self-identity and norms; the *Unknowledgeable but Compliant* (Non-Environmentalists), who have low knowledge, although they think they know more than they actually do, but are compliant even though this is not consistent with their identity and see the policy as an inconvenience; and the *Unknowledgeable, Non-compliant, but Receptive*, who do not know much about the policy even though it has been around for a while, do not comply, but are receptive to more information about the policy. These results have important implications in how policy makers may want to communicate their existing and future environmental policies.

Discussion

Our findings suggest that the distinction between objective and subjective ESP knowledge is important for ESP-related behavioural outcomes. Objective knowledge is more important than subjective knowledge for compliance intentions, while subjective knowledge is more important than objective knowledge for information receptivity, even though these are mediated by ESP attitudes. The more people know, the more likely they are to comply as they understand the importance and impact of the policy initiative, while those who think that they know a lot, even if what they know is not accurate, will not be receptive to policy information. These findings have practical relevance towards intended public policy behavioural compliance after an environmental policy goes through structural changes, and the implementation of future environmental policies.

Take, for example, the recent change in Tesco's bag policy whereby the 'bag for life' has completely replaced

© 2021 The Authors
European Management Review published by John Wiley & Sons Ltd on behalf of European Academy of Management (EURAM)

the previous single-use plastic bags at the point of sale (Smithers, 2017). In this scenario, the public's objective policy knowledge needs to be updated to reflect the fact that these bags are different and are intended to be used at least four times in order to be more environmentally friendly than their single-use alternative (Edwards and Fry, 2011). Our results here suggest that those with high subjective knowledge, may face additional barriers to behaviour compliance due to lower information receptivity and, thus, have a lower likelihood to gain objective policy knowledge going forward. Somewhat worryingly, both those participants labelled as *Knowledgeable and Compliant* and those labelled *Unknowledgeable but Compliant* through our cluster analysis (Table 4) were identified as having high subjective knowledge and low information receptivity. On the surface, this would appear to indicate that both groups are susceptible to this failure to update their policy related knowledge. This effect, however, appears to be somewhat mitigated through the significant relationship between environmental self-identity and information receptivity, indicating that those with a strong environmental identity may be more willing to update their ESP knowledge when this is required of them.

With the advice around climate change and environmental sustainability behaviours constantly being subject to new findings, a willingness on the part of the public to update knowledge accordingly is vital to the success of any future environmental policies. Hence, public policy makers should aim to increase objective ESP knowledge prior to a policy launch, while managing the subjective knowledge related to the policy. An important example in this regard would be the possible future reduction of plastics within food packaging. This policy area, as with the single-use plastic bag policy, requires a nuanced approach rather than a ubiquitous ban. Such a ban within this particular sustainability area would probably cause a substantial increase in associated food wastage and, therefore, a larger negative environmental impact (Peake, 2020). To communicate such nuance, a balance between objective and subjective knowledge would need to be reached. This could be achieved by disseminating factual information to the public that not only updates their knowledge but also helps individuals realise their possible misconceptions related to the policy. As such, the use of questions to disseminate factual information (e.g., 'Did you know, while our cucumbers are plastic wrapped this extends their shelf life from 3 to 14 days? This packaging far offsets the carbon footprint of a wasted cucumber'(Wrap, 2018)) could help in both increasing objective ESP knowledge while managing subjective ESP knowledge.

The cluster analysis results illustrate the need for different marketing tactics to promote policies for sustainable success. The *Knowledgeable and Compliant* segment would be the first to comply with new environmental policy initiatives; however, as previously noted, its high subjective knowledge may need to be managed so as to maintain information receptivity if the policy were to change in the future. For the *Unknowledgeable but Compliant* segment, public policy makers should increase objective knowledge and reduce subjective knowledge to increase compliance and information receptivity respectively and turn this segment into environmentalists. Lastly, for the *Unknowledgeable, Non-compliant, but Receptive* segment, public policy makers should increase objective knowledge to increase compliance, as members of this segment are the ones that need more information the most and since they are receptive this can lead to greater compliance. The cluster analysis once again illustrated the importance of subjective knowledge and receptivity in the context of environmental sustainability.

Subjective knowledge and receptivity thus should not be neglected in understanding responses to environmental sustainability polices. These results, along with differences among demographic groups, indicate that a 'one-size-fits-all' approach may not be the best way to disseminate policy information across the general public. Policy makers need to ensure that any additional policy information is involving and fits the segments it aims to target.

Theoretical and practical contributions

This paper first contributes to business and environmental sustainability management literature, by drawing on the notion of subjective knowledge to explain variation in public compliance, as well as drawing on the concept of receptivity for ESP initiatives as an additional behavioural outcome to compliance. These concepts have also been linked together by Golden and Stanaland (2000), investigating health-related behaviour. They have also been considered in organisational contexts. For example, Butler (2003) examined receptivity factors in an organisational context and Pillai (2010) examined knowledge calibration (i.e., the difference between objective and subjective knowledge). However, they have received scant attention in the business and environmental sustainability management literature and our study is the first to address this research gap.

Second, our investigation has examined how subjective knowledge and receptivity fit within the knowledge-attitude-practice framework. In doing so, this paper also contributes to prior literature by proposing an extended KAP model, within an ESP context, which: (1) investigates ESP knowledge effects on attitudes and behaviours, while distinguishing between objective and subjective ESP knowledge; and (2) distinguishes between

© 2021 The Authors
European Management Review published by John Wiley & Sons Ltd on behalf of European Academy of Management (EURAM)

two behavioural outcomes: ESP information receptivity (Golden and Stanaland, 2000; Manika and Golden, 2011) and compliance/intentions. The extended ESP KAP model has been tested within the context of the UK's single-use bag charge and contributes to the literature on the knowledge–behaviour gap in an empirical setting. It is important to understand the processes that underlie the effects of environmental sustainability policies (Jakovcevic *et al*., 2014).

Lastly, in addition to the theoretical contributions, this study aims to identify target segments of the public which may be more open to environmental policies. The idea is that governmental bodies and organisations may use communications tactics to promote 'policy products.' Such endeavours would be based on social behaviour as citizen reciprocation contributing to the aims of the government. Thus, we provide recommendations on how to target audiences based on their extended ESP-related KAP characteristics.

Limitations and future research directions

This paper contributes to the business and environmental sustainability management literature by distinguishing between objective and subjective ESP knowledge, and between compliance and receptivity intentions, while advancing the KAP model. Even though the paper makes several theoretical and practical contributions, it also has limitations such as the fact that voluntary policy compliance may differ from taxation, which is compulsory, and the reliance on self-reported data and the lack of actual behaviour measures. Caution should also be exercised regarding the generalisability of these results and the cross-sectional design, which does not allow us to argue for the direction of causality. Future research should focus on using a more representative population sample, examining different environmental and non-environmental policies in terms of how the extended KAP model may vary, testing the predictability of environmental behaviour theories with the integration of objective and subjective knowledge, as well as information receptivity, and understanding how different information formats may affect the extended KAP model constructs, along with actual behaviour. The ecological validity of our findings could also be tested with different policies and in different national/cultural settings.

References

Alba, J. W. and J. W. Hutchinson, 2000, "Knowledge calibration: What consumers know and what they think they know". *Journal of Consumer Research*, **27**: 123–156.

Anastasi, A., 1976. *Psychological testing*. New York: Macmillan Publishing.

Antonetti, P. and D. Manika, 2017, "The offline spill-over of signing online petitions against companies: A dual pathway model". *Information Technology & People*, **30**: 969–990.

Aschemann-Witzel, J., T. Bech-Larsen and S. Capacci, 2016, "Do target groups appreciate being targeted? An exploration of healthy eating policy acceptance". *Journal of Consumer Policy*, **39**: 285–306.

Bagozzi, R. P., 2011, "Measurement and meaning in information systems and organizational research: Methodological and philosophical foundations". *MIS Quarterly*, 261–292.

Bamberg, S. and P. Schmidt, 2003, "Incentives, morality, or habit? Predicting students' car use for university routes with the models of Ajzen, Schwartz, and Triandis". *Environment and Behavior*, **35**: 264–285.

Bansal, H. S., S. F. Taylor and Y. St. James, 2005, "'Migrating' to new service providers: Toward a unifying framework of consumers' switching behaviors". *Journal of the Academy of Marketing Science*, **33**: 96–115.

Baranowski, T., K. W. Cullen, T. Nicklas, D. Thompson and J. Baranowski, 2003, "Are current health behavioral change models helpful in guiding prevention of weight gain efforts?" *Obesity Research*, **11**: 23S–43S.

Bhuvaneswari, A. S. and T. Padmanaban, 2012, "Attitude of senior secondary students towards e-learning". *Elixir Educational Technology*, **51**: 10886–10888.

Brekke, K. A., G. Kipperberg and K. Nyborg, 2010, "Social interaction in responsibility ascription: The case of household recycling". *Land Economics*, **86**: 766–784.

Brock, T. C., S. M. Albert and L. A. Becker, 1970, "Familiarity, utility, and supportiveness as determinants of information receptivity". *Journal of Personality and Social Psychology*, **14**: 292.

Brucks, M., 1985, "The effects of product class knowledge on information search behavior". *Journal of Consumer Research*, **12**: 1–16.

Bulgurcu, B., H. Cavusoglu and I. Benbasat, 2010, "Information security policy compliance: An empirical study of rationality-based beliefs and information security awareness". *MIS Quarterly*, **34**: 523–548.

Butler, M. J. R., 2003, "Managing from the Inside Out: Drawing on Receptivity to Explain Variation in Strategy Implementation". *British Journal of Management*, **14**: S47–S60. https://doi.org/10.1111/j.1467-8551.2003.00392.x

Carlson, J. P., L. H. Vincent, D. M. Hardesty and W. O. Bearden, 2009, "Objective and subjective knowledge relationships: A quantitative analysis of consumer research findings". *Journal of Consumer Research*, **35**: 864–876.

Ch, A. H., 2006, "Effect of guidance services on study attitudes, study habits and academic achievement of secondary school students". *Bulletin of Education & Research*, **28**: 35–45.

Chandran, S. and V. G. Morwitz, 2005, "Effects of participative pricing on consumers' cognitions and actions: A goal theoretic perspective". *Journal of Consumer Research*, **32**: 249–259.

Ciocirlan, C. E., D. Gregory-Smith, D. Manika and V. Wells, 2020, "Using values, beliefs, and norms to predict conserving behaviors in organizations". *European Management Review*, **17**: 543–558.

Convery, F., S. McDonnell and S. Ferreira, 2007, "The most popular tax in Europe? Lessons from the Irish plastic bags levy". *Environmental and Resource Economics*, **38**: 1–11.

© 2021 The Authors
European Management Review published by John Wiley & Sons Ltd on behalf of European Academy of Management (EURAM)

DEFRA, 2018, "Carrier bags: why there's a charge" Available from https://www.gov.uk/government/publications/single-use-plastic-carrier-bags-why-were-introducing-the-charge/carrier-bags-why-theres-a-5p-charge

DEFRA, 2019, "Plastic bag sales down 90% since introduction of 5p charge" [Press release]. Available from https://www.gov.uk/government/news/plastic-bag-sales-down-90-since-introduction-of-5p-charge

du Monde, M., 2011, "The KAP survey model (knowledge, attitudes, & practices)" Available from https://www.spring-nutrition.org/publications/tool-summaries/kap-survey-model-knowledge-attitudes-and-practices. 22 September 2020.

Edwards, C. and J. M. Fry, 2011. *Life cycle assessment of supermarket carrier bags*. Bristol: Environment Agency.

EIA, 2019, "Checking out on plastics II: Breakthroughs and backtracking from supermarkets" Available from https://eia-international.org/report/checking-out-on-plastics-ii/

Erdelez, S., 1999, "Information encountering: It's more than just bumping into information". *Bulletin of the American Society for Information Science and Technology*, **25**: 26–29.

Etzioni, A., 1975. *Comparative analysis of complex organizations*. New York: Free Press. ISBN-10: 0029096200. ISBN-13: 978-0029096208.

Flynn, L. R. and R. E. Goldsmith, 1999, "A Short, Reliable Measure of Subjective Knowledge", *Journal of Business Research*, **46**(1), 57–66. https://doi.org/10.1016/S0148-2963(98)00057-5

Gadenne, D., B. Sharma, D. Kerr and T. Smith, 2011, "The influence of consumers' environmental beliefs and attitudes on energy saving behaviours". *Energy Policy*, **39** (12): 7684–7694.

Gatersleben, B., L. Steg and C. Vlek, 2002, "Measurement and determinants of environmentally significant consumer behavior". *Environment and Behavior*, **34**(3): 335–362.

Golden, L. L., J. K. Frels, V. C. Vincent and G. D. Santos, 1996, "Ecological information receptivity of Hispanic and Anglo Americans". *Advances in Consumer Research*, **23**: 189–195.

Stanaland, A. J. S. and L.L. Golden, 2000, "Consumer Receptivity to Social Marketing Information: The Role of Self-Rated Knowledge and Knowledge Accuracy", *Academy of Marketing Studies Journal*, **13**(2): 25.

Hair, J. F., C. M. Ringle and M. Sarstedt, 2011, "PLS-SEM: Indeed a silver bullet". *Journal of Marketing Theory and Practice*, **19**(2): 139–152.

Hallsworth, M., 2014, "The use of field experiments to increase tax compliance". *Oxford Review of Economic Policy*, **30**(4): 658–679.

Hayes, A. F., 2012. *PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling*. University of Kansas, KS.

Hiew, C., Y. Chin, Y. Chan and N. M. Mohd, 2015, "Development and validation of knowledge, attitude and practice on healthy lifestyle questionnaire (KAP-HLQ) for Malaysian adolescents". *Journal of Nutrition and Health Sciences*, **2**(4): 1–11.

Homburg, C., J. P. Workman and O. Jensen, 2002, "A Configurational Perspective on Key Account Management". *Journal of Marketing*, **66**(2), 38–60. https://doi.org/10.1509/jmkg.66.2.38.18471

Jakovcevic, A., L. Steg, N. Mazzeo, R. Caballero, P. Franco, N. Putrino and J. Favara, 2014, "Charges for plastic bags: Motivational and behavioral effects". *Journal of Environmental Psychology*, **40**: 372–380.

Johnson, E. J. and J. E. Russo, 1984, "Product familiarity and learning new information". *Journal of Consumer Research*, **11** (1): 542–550.

Klöckner, C. A. and E. Matthies, 2004, "How habits interfere with norm-directed behaviour: A normative decision-making model for travel mode choice". *Journal of Environmental Psychology*, **24**(3): 319–327.

Kok, A. M., F. G. de Bakker and P. Groenewegen, 2019, "Sustainability struggles: Conflicting cultures and incompatible logics". *Business & Society*, **58**(8): 1496–1532.

Kollmuss, A. and J. Agyeman, 2002, "Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior?" *Environmental Education Research*, **8**(3): 239–260.

Laroche, M., J. Bergeron and G. Barbaro-Forleo, 2001, "Targeting consumers who are willing to pay more for environmentally friendly products". *Journal of Consumer Marketing*, **18**(6): 503–520.

Launiala, A., 2009, "How much can a KAP survey tell us about people's knowledge, attitudes and practices? Some observations from medical anthropology research on malaria in pregnancy in Malawi". *Anthropology Matters*, **11**(1): 1–13.

Lewis, H., K. Verghese and L. Fitzpatrick, 2010, "Evaluating the sustainability impacts of packaging: The plastic carry bag dilemma". *Packaging Technology and Science: An International Journal*, **23**(3): 145–160.

Lim, S.-R. and J. M. Schoenung, 2010, "Toxicity potentials from waste cellular phones, and a waste management policy integrating consumer, corporate, and government responsibilities". *Waste Management*, **30**(8–9): 1653–1660.

Manika, D. and L. L. Golden, 2011, "Self-efficacy, threat, knowledge and information receptivity: Exploring pandemic prevention behaviors to enhance societal welfare". *Academy of Health Care Management Journal*, **7**(1): 31.

Manika, D., D. Gregory-Smith and S. Papagiannidis, 2018, "The influence of prior knowledge structures on website attitudes and behavioral intentions". *Computers in Human Behavior*, **78**: 44–58.

Milligan, G. W. and M. C. Cooper, 1987, "Methodology review: Clustering methods". *Applied Psychological Measurement*, **11**(4): 329–354.

Moorman, C., K. Diehl, D. Brinberg and B. Kidwell, 2004, "Subjective knowledge, search locations, and consumer choice". *Journal of Consumer Research*, **31**(3): 673–680.

Mørk, T., T. Bech-Larsen, K. G. Grunert and G. Tsalis, 2017, "Determinants of citizen acceptance of environmental policy regulating consumption in public settings: Organic food in public institutions". *Journal of Cleaner Production*, **148**: 407–414.

Nilsson, A. and A. Biel, 2008, "Acceptance of climate change policy measures: Role framing and value guidance". *European Environment*, **18**(4): 203–215.

Nordfjærn, T. and T. Rundmo, 2019, "Acceptance of disincentives to driving and pro-environmental transport intentions: The role of value structure, environmental beliefs and norm activation". *Transportation*, **46**(6): 2381–2396.

© 2021 The Authors
European Management Review published by John Wiley & Sons Ltd on behalf of European Academy of Management (EURAM)

Nyborg, K., R. B. Howarth and K. A. Brekke, 2006, "Green consumers and public policy: On socially contingent moral motivation". *Resource and Energy Economics*, **28**(4): 351–366.

Nysveen, H., P. E. Pedersen and H. Thorbjørnsen, 2005, "Intentions to use mobile services: Antecedents and cross-service comparisons". *Journal of the Academy of Marketing Science*, **33**(3): 330–346.

O'Brien, P. and A. Vourc'h, 2002, "Encouraging environmentally sustainable growth: Experience in OECD countries". *Empirica*, **29**(2): 93–111.

Owens, S., 2000, "'Engaging the public': Information and deliberation in environmental policy". *Environment and Planning A*, **32**(7): 1141–1148.

Papagiannakis, G. and S. Lioukas, 2018, "Corporate environmental management: Individual-level drivers and the moderating role of charismatic leadership". *European Management Review*, **15**(4): 475–489.

Peake, L., 2020, "Plastic promises: What the grocery sector is really doing about packaging" Available from https://www.green-alliance.org.uk/plastic_promises.php

Pfeffer, J. and G. R. Salancik, 2003. *The external control of organizations: A resource dependence perspective*. Stanford, CA: Stanford University Press.

Pillai, K. G. 2010, "Managers' Perceptual Errors Revisited: the Role of Knowledge Calibration". *British Journal of Management*, **21**: 299–312. https://doi.org/10.1111/j.1467-8551.2009.00646.x

Podsakoff, P. M., S. B. MacKenzie, J.-Y. Lee and N. P. Podsakoff, 2003, "Common method biases in behavioral research: A critical review of the literature and recommended remedies". *Journal of Applied Psychology*, **88**(5): 879.

Poortinga, W., L. Whitmarsh and C. Suffolk, 2013, "The introduction of a single-use carrier bag charge in Wales: Attitude change and behavioural spillover effects". *Journal of Environmental Psychology*, **36**: 240–247.

Raju, P. S., S. C. Lonial and W. Glynn Mangold, 1995, "Differential effects of subjective knowledge, objective knowledge, and usage experience on decision making: An exploratory investigation". *Journal of Consumer Psychology*, **4**(2): 153–180.

Ritch, E., C. Brennan and C. MacLeod, 2009, "Plastic bag politics: Modifying consumer behaviour for sustainable development". *International Journal of Consumer Studies*, **33**(2): 168–174.

Rudell, F., 1979. *Consumer food selection and nutrition information*. New York: Praeger.

Sarle, W., 1983. *Cubic clustering criterion*. SAS Institute Incorporated.

Schwartz, S. H., 1973, "Normative explanations of helping behavior: A critique, proposal, and empirical test". *Journal of Experimental Social Psychology*, **9**(4): 349–364.

Sligo, F. X. and A. M. Jameson, 2000, "The knowledge – behavior gap in use of health information". *Journal of the American Society for Information Science*, **51**(9): 858–869.

Smithers, R., 2017, "Tesco to end sales of 5p carrier bags". *The Guardian*. Available from https://www.theguardian.com/environment/2017/aug/07/tesco-to-end-sales-of-5p-carrier-bags

Steg, L., J. W. Bolderdijk, K. Keizer and G. Perlaviciute, 2014, "An integrated framework for encouraging pro-environmental behaviour: The role of values, situational factors and goals". *Journal of Environmental Psychology*, **38**: 104–115.

Thomas, G. O., W. Poortinga and E. Sautkina, 2016, "The Welsh single-use carrier bag charge and behavioural spillover". *Journal of Environmental Psychology*, **47**: 126–135.

Thøgersen, J., 1999, "The ethical consumer. Moral norms and packaging choice". *Journal of Consumer Policy*, **22**(4): 439–460.

Vagias, W. M., 2006, "Likert-type scale response anchors", Clemson international institute for tourism & Research Development, Department of Parks, Recreation and Tourism Management, Clemson University.

Van der Werff, E., L. Steg and K. Keizer, 2013, "The value of environmental self-identity: The relationship between biospheric values, environmental self-identity and environmental preferences, intentions and behaviour". *Journal of Environmental Psychology*, **34**: 55–63.

Verplanken, B., I. Walker, A. Davis and M. Jurasek, 2008, "Context change and travel mode choice: Combining the habit discontinuity and self-activation hypotheses". *Journal of Environmental Psychology*, **28**(2): 121–127.

Wagner, T., T. Hennig-Thurau and T. Rudolph, 2009, "Does customer demotion jeopardize loyalty?" *Journal of Marketing*, **73**(3): 69–85.

Ward, J. H. Jr., 1963, "Hierarchical grouping to optimize an objective function". *Journal of the American Statistical Association*, **58**(301): 236–244.

Whitmarsh, L. and S. O'Neill, 2010, "Green identity, green living? The role of pro-environmental self-identity in determining consistency across diverse pro-environmental behaviours". *Journal of Environmental Psychology*, **30**(3): 305–314.

Wilson, T. D., 2000, "Human information behavior". *Informing science*, **3**(2): 49–56.

Wrap, 2018, "The unintended consequences of a War on Plastic" Available from http://www.wrap.org.uk/blog/2018/04/unintended-consequences-war-plastic

Yazdanmehr, A. and J. Wang, 2016, "Employees' information security policy compliance: A norm activation perspective". *Decision Support Systems*, **92**: 36–46.

© 2021 The Authors
European Management Review published by John Wiley & Sons Ltd on behalf of European Academy of Management (EURAM)