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Consumer Greenwashing: Using the Theory of Planned Behaviour to Explain Unethical Consumer Behaviour

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Abstract

The market for green products is a challenge for marketers. Segmentation studies regularly show contradicting results and little is known about the motivations to buy green products. While the green consumer is often expected to be driven by environmental concerns, this study suggests that some consumers, analogue to companies, perform greenwashing: consuming green products to offset environmentally harmful (consumer) behaviour and consuming green products to attain status and a pro-social reputation. 174 students from Germany and the UK took part in an online survey.

In this study, Ajzen's Theory of Planned Behaviour (TPB) was used to investigate consumer greenwashing. The two predictors Self-Identity and Moral Obligation were included in the original framework of the theory. Results show that both predictors significantly improve the TPB in the context of status consumption but not in the case of offsetting.

Furthermore, around one fifth of the participants reported that they performed both greenwashing behaviours from moderate to high frequency and only half of the participants reported that they did not perform either of the behaviours.

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1 Introduction

Nowadays, the issue of consuming green, environmentally friendly, sustainable etc. is widespread. In 2009, sales of organic food and beverages increased to 5.8 billion Euro in Germany and £1.84 billion in the UK (Kilcher et al., 2011). Germany's organic food market constantly grew despite the financial and economic crisis and 94% of all German households are estimated to have consumed organic food in 2009 ("*Bio trotzt der Krise*", 2010). Today, Germany is the largest market for organic products in the European Union, followed by France and the United Kingdom and the world's second largest after the United States (Kilcher et al., 2011). The UK has been one of the fastest growing markets for organic products in the EU in the past decade with recent declines in the organic food market (Kilcher et al., 2011). Furthermore, the demand for fair trade products is increasing in European countries (de Ferran & Grunert, 2007).

With organic and fair trade being among the key determinants of green products (Gilg et al., 2005), these figures support the relevance of researching green consumption and highlight the relevance of the German and UK market. Consumers have become increasingly aware of and concerned about social, ethical and environmental issues (Moisander, 2007; Hedde, 2010; Kim & Han, 2010; Mazar & Zhong, 2010). Kim & Han (2010) claim that "[t]hese individuals' environmental concerns tend to result in environmentally conscious behaviors". Accordingly, more and more consumers switch from environmentally harmful and unethical towards eco-friendly and ethical products or services (Roberts, 1996; Shaw & Shiu, 2003; Freestone & McGoldrick, 2008). But still, after years of green marketing research, only little is known about the motives of the green consumer.

This study investigates possible unethical motives, which challenge the common assumption that a consumer of green products is by definition a green consumer, i.e. that he is driven by eco-motives. Only recently, research found that unethical behaviour might be involved in the consumption of green products. In this study we examine if consumers perform "greenwashing" to soothe their conscience or to attain a good reputation rather than consuming "green" products for ethical reasons.

2 Literature review

2.1 The green consumer

There is confusion about various terms that by some authors are used interchangeable but by others are understood as very different. Green, ethical, sustainable, environmentally friendly or socially-responsible are among those terms.

Sustainability was first defined 1987 as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brassington & Pettit, 2005, p.12). Thus, a sustainable consumer is someone who satisfies his own needs without losing sight of the needs of others in a long term. This consideration of others, on the other hand, is existent in socially conscious or socially concerned consumption as well. Webster (1975) describes the *socially conscious consumer* as someone “who takes into account the public consequences of his or her private consumption or who attempts to use his or her purchasing power to bring about social change”. This definition is in its conception not much different to the definition of a sustainable consumer who takes the social consequences of his consumption into consideration as well. Of course the terms are not identical. Sustainability has a longer-termed perspective whereas the socially conscious consumption can be aimed at present and future change alike. But still, both have the consideration of the society in common. Furthermore, the understanding of sustainability is strongly connected to the concept of green consumption. As a result, green consumption is increasingly associated with sustainable practices like resource saving. On the other hand, sustainability in many cases is exclusively understood as environmental sustainability (Connolly & Prothero, 2008). However, the term sustainability includes not only environmental, but also social and economic aspects (Hedde, 2010).

Green consumption is hard to define as it includes a large variety of single actions (Gilg, 2005), such as the purchase of organic, fair trade, recycled or locally produced products, products with a lower environmental impact, but also practices such as using your own reusable shopping bag. Moisander (2007) describes green consumption as a subsumption of environmentally concerned and socially conscious consumption. On the other hand, green consumption is often understood as being a subset of ethical consumption (Newholm & Shaw, 2007; Connolly & Prothero, 2008; Freestone & McGoldrick, 2008). According to this opinion, green consumption is solely about environmental concerns while ethical consumption is the sum of environmentally concerned and socially conscious consumption (Freestone & McGoldrick, 2008). Hence, the two definitions of, for example, Moisander (2007) on the one hand and Freestone and McGoldrick (2008) on the other hand, describe the same behaviour whilst using different terms. Accordingly, the consumption of, for example, fair trade products, a more socially than environmentally motivated action, is sometimes subsumed under green consumption and sometimes subsumed under ethical consumption (de Ferran & Grunert, 2007; Freestone & McGoldrick, 2008).

Although ethical consumption might describe best the behaviour that is investigated in this study, we chose the term green consumption for several reasons. First, our focus is slightly more on an environmental motivation. Second, “green consumption” is easily and intuitionally understandable in an online questionnaire without complicated definitions. And finally, the

use of the term “ethical consumption” presupposes an everyday “unethical” consumption, which has been criticised by various scholars (Newholm and Shaw, 2007).

A main research issue in the field of green consumption is identifying the green market segment. Due to different underlying definitions of green, ethical, socially responsible, etc., the resulting segments in different studies are hardly comparable or even contradictory (Roberts, 1996; Straughan & Roberts, 1999; Gilg et al., 2005; McDonald & Oates, 2006; Finisterra do Paço et al., 2008).

Marketing researchers focused on the so called Lohasians for several years. The Lohasians or LOHAS (lifestyles of health and sustainability) are “people who worry about the environment, want products to be produced in a sustainable way, and spend money to advance what they see as their personal development and potential” (Solomon, 2011, 180). However, demand for green products increased in the past years not only among the LOHAS, but in wider society (Brassington & Pettit, 2005, p.74), and today, green consumption is spreading to the mass market (Solomon, 2011, p.180).

Diamantopoulos et al. (2003) reviewed past studies and their approaches to identify the green consumer and found that most researchers chose a (socio-)demographic segmentation base. Although (socio-)demographics were found to be accurate in identifying segments with shared attitudes, they failed in predicting behaviour. Accordingly, Straughan and Roberts (1999) found demographics less significantly correlated to green consumer behaviour than psychographics.

Roberts (1996) differentiated the consumers by the frequency they considered social and/or environmental aspects during the purchasing process (5-point-scale from never to always). However, this approach only informs that there are groups with different purchasing frequencies, but it does not tell what these subgroups look like and what their common characteristics, attitudes or motivations are. Thus it does not lead to an actionable market segment.

D’Souza (2004) segments the green market into four groups: environmentally Green Consumers, Price Sensitive Green Consumers, Emerging green consumers and Conventional Consumers. While the conventional consumer does not purchase green products, the emerging green consumer does, without being thoroughly environmentally concerned. The environmentally green consumer and the price sensitive consumer on the other hand are more likely to consume green products due to their cognitive involvement but differ in risk perception, e.g. higher prices for green products.

For this research, the emerging green consumers are of special interest. Many researchers assume that consumers of green products are by definition green consumers (Zimmer et al.,

1994). However, not all consumers of green products are environmentally concerned, the purchase of green products being sometimes just a matter of availability. Accordingly, the question should not be “Who is the green consumer?”, but “Who consumes green products – and for what reasons?”.

2.2 Consumer Behaviour - Consumer Greenwashing?

The motives for purchasing green products vary among consumers and may even be contradictory (Cleveland et al., 2005; Grønhøj, 2006; Moisander, 2007). Griskevicius et al. (2010) demonstrate this with the example of the Toyota Prius: the motives for buying such a hybrid car may be to save money due to an excellent mileage, causing less CO2 emissions or to make a statement about oneself. Accordingly, the results of McEachern and McClean (2002) and Padel and Foster (2005), who found consumers less motivated by altruistic concerns such as environmental issues, are contradicting the results of Honkanen et al. (2006) who found environmental issues to have a strong influence on consumers’ attitudes towards a product.

Those interpersonal contradictions can also be found in the individual itself. Pro-environmental behaviour, which is in general connected to collective goals, stands in contradiction to self-interest goals of the consumer. But on the other hand, those collective goals do not necessarily exclude individual goals (Moisander, 2007). This is the case when pro-environmental behaviour is extrinsically motivated, i.e. the consumer is not interested in the activity for its own sake, but rather interested in positive effects that come along with this behaviour (Pelletier et al., 1998). In the example of the Toyota Prius, the number one reason among consumers for buying this car was to make a statement (Griskevicius et al., 2010). Thus, in this case an assumed pro-environmental behaviour is not mainly motivated by an intrinsic motivation to save the environment, but by the extrinsic motivation to achieve status.

Status consumption can be defined as “the motivational process by which individuals strive to improve their social standing through conspicuous consumption of consumer products that confer or symbolize status for both the individual and surrounding others” (Eastman et al., 1999, cited in O’Cass & Frost, 2002, p.68). In the context of pro-environmental behaviour in general and green consumption in particular, though, this consumption for status and display has been ignored for a long time. Only in the past few years, single studies pointed out the relation between the purchase of green products and status, rather than seeing green consumption merely ethical motivated.

Milinski et al. (2006) investigated the behaviour of investing in climate protection. They claim that pro-environmental behaviour is rewarded by the society and therefore reinforces altruism. Crucial in this context is the possibility to perform the behaviour in public.

Investments in climate protection increased significantly, when people could invest publically. Kotchen (2009) also highlights the importance of publicity by describing a warm glow of good feeling and a reputational boost that donating can bring. It is not so far off to believe that some individuals intentionally behave in an altruistic way, but predominantly follow a self-interest goal. This behaviour, longing for status and therefore trying to be seen altruistic, is called competitive altruism (Griskevicius et al. 2010). However, a consumer does not have to be altruistic or egoistic, in fact "a consumer with a genuine interest in being 'green', for the sake of society and the wider environment, may also have a strong self-interest in being seen to be green" (Freestone & McGoldrick, 2008, 447).

Griskevicius et al. (2010) investigated the influence of status on the consumption of green products. They conducted three experiments in which the participants could choose between a luxurious product and a less luxurious green product. In the first experiment, with all product pairs having the same price, they found that status oriented people prefer the less luxurious green products. In a second experiment the purchase situation was once in private and once in public. When people were buying in public, status motives and the preference for the green product increased. In a third experiment the prices were changed in both directions. A higher price of the green products led to people with status motives buying it, the signal being that the buyer is both caring for the environment and/or society and able to pay the higher price. A lower price of the green product leads to a reputational dilemma because the purchase of the green product in this case may also demonstrate that the consumer is not able to behave in another way. Hence, the reputational appeal of a lower priced green product decreases.

While status is an extroversion, i.e. the interest is located outside of the individual, *offsetting* is an introverted action. Offsetting, in the context of this study, is the action "to quell our guilt by purchasing products with proenvironmental intent" (Orange, 2010, p.29). For example, several airlines today offer to neutralize the CO2 that is emitted during a flight for some extra money. But indeed, every green product is potentially qualified to be part of an offset trade (Soron, 2010).

De Ferran and Grunert (2007) found in their qualitative study that French fair trade coffee buyer's purchasing motives included not only obvious ethical reasons, but also "inner harmony", which indicates a tendency to offsetting. Similarly, in a study by Pelletier et al. (1998) one group of the respondents expressed mainly instrumental reasons for their behaviour which could be described as offsetting green guilt and obtaining status. These findings are supported also by Mazar and Zhong (2010). In a series of experiments they showed that green consumption might even evoke the licencing of unethical behaviour, i.e. cheating and stealing.

That offsetting may lead to licencing even more unethical behaviour and therefore may cause a rebound effect is also mentioned by Kotchen (2009) and Gans and Groves (2009). In an experiment by Gneezy and Rustichini (2000), parents were charged a fee for picking up their children late from the nursery. The result was that late pickups increased more than 100%. The authors explain that "[t]he ability to pay a late fee – essentially an off set - alleviated guilt and justified tardiness" (Kotchen, 2009, 30).

Together, status consumption and offsetting constitute what is called *consumer greenwashing* in this study. Greenwashing generally refers to organizations that perform green acts with an underlying purpose of increasing profits (Orange, 2010, 30). Consumers, however, as past research indicates, may as well perform outwardly green acts solely for conscience-soothing or status motives. Thus, we apply the concept of greenwashing to a consumer context.

2.3 The Theory of Planned Behaviour

One problem for marketers is the attitude-behaviour gap of consumers, i.e., the low correlation between their stated attitude and the actual behaviour (Roberts, 1996; Cleveland et al., 2005; Solomon, 2011, 293). One possibility to overcome this gap is the use of the Theory of Planned Behaviour (TPB), because it does not infer from attitude to behaviour directly. The TPB has proven to be able to explain and predict ethical as well as unethical behaviour in many domains of life, e.g. health, cheating, recycling, and green purchase (Beck & Ajzen, 1991; Chang, 1998; Kalafatis et al., 1999; Amitage & Conner, 2001; Tonglet et al., 2004; Chen & Yang, 2007; Harding et al. 2007) and is one of the theories most frequently used to investigate pro-environmental behaviour (Jackson, 2005).

The TPB is an extension of Fishbein and Ajzen's theory of reasoned action (TRA), which did not include the determinant Perceived Behavioural Control (PBC) (Ajzen, 1991). Already the TRA was one of the most frequently used models to investigate social behaviour (Jackson, 2005). But with the extension of PBC, the model significantly gained predictive power as several studies report (Ajzen, 1991; Beck & Ajzen, 1991; Chang, 1998; Armitage & Conner, 1999). The TPB has been proven to be more suitable for the prediction of unethical behaviour as well (Chang, 1998).

The TPB consists of 4 variables that directly or indirectly influence the behaviour. The three independent variables Attitude, Subjective Norms and PBC determine the dependent variable Intention. Intention, although not being a perfect predictor of behaviour, is still accepted as the best predictor available (Kim & Han, 2010).

The independent dimensions in figure 2 are potentially correlated. That means, for example, that Subjective Norms may influence Attitudes and vice versa. This correlation has been

criticised by some (Chang, 1998), but is nothing exceptional. Ajzen (2010) comments that the three independent variables "are conceptually independent predictors of intentions. However, empirically they are usually found to be intercorrelated because the same information can influence behavioral, normative, and/or control beliefs, the theoretical antecedents of A[ttitudes], S[ubjective Norms], and PBC, respectively."

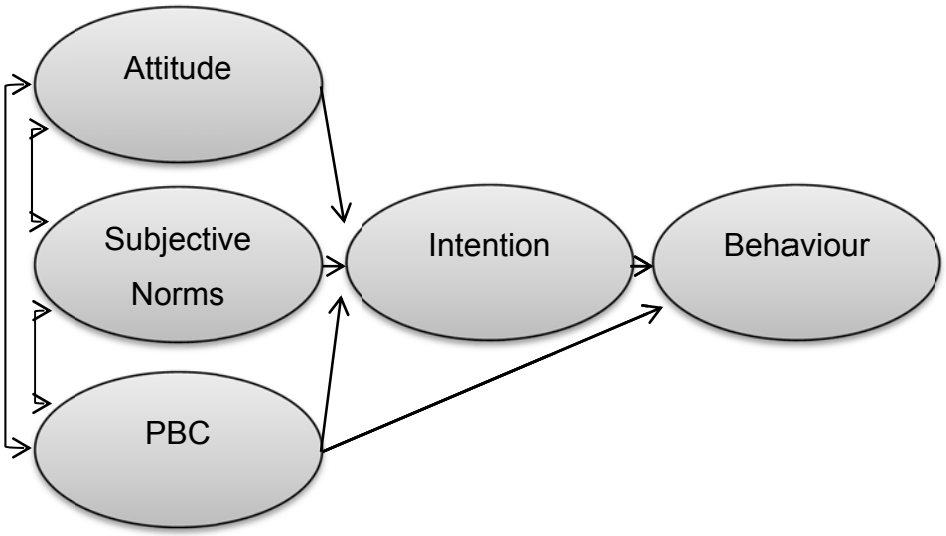

Fig. 1: Theory of Planned Behaviour (based on Ajzen, 1991, p.182)

The bases for the three independent variables are the according beliefs. These are "behavioral beliefs which are assumed to influence attitudes toward the behavior, normative beliefs which constitute the underlying determinants of subjective norms, and control beliefs which provide the basis for perceptions of behavioural control" (Ajzen, 1991, p.189).

Attitude. The attitude towards a specific behaviour directly influences the intention to perform the behaviour. The more favourable the attitude, the stronger should be the intention. But as all the independent variables are interlinked a favourable attitude alone does not predict the behaviour. Attitudes are formed by behavioural beliefs, i.e., "we learn to favour behaviors we believe have largely desirable consequences and we form unfavourable attitudes towards behaviors we associate with mostly undesirable consequences" (Ajzen, 1991, p.191). A person's attitude, therefore, is directly proportional to the sum of n behavioural beliefs (b) multiplied with the person's subjective evaluation (e) of the respective salient belief (Ajzen, 1991):

$$A \propto \sum b_i e_i.$$

Subjective Norms. Subjective Norms are subjective perceptions of an individual implying that most people who are important to him think he should or should not perform a certain behaviour. Subjective Norms are influenced by normative beliefs. That is, the individual

considers what important reference people or groups, e.g. family or friends, think about the performance of a specific behaviour. Subjective Norms are directly proportional to the summed multiplication of the strength of each normative belief (n) and the motivation to comply (m) with the respective referent (Ajzen, 1991):

$$SN \propto \sum n_i m_i.$$

For example, it is possible that behaviour like recycling or reusing a towel in a hotel is to a bigger extent influenced by a societal norm than by environmental concerns (Cleveland et al. 2005, Kim & Han, 2010). Experiments in hotels support this hypothesis by showing that the highest levels of conservation result from social appeals, e.g. information about the conservation behaviour of other guests in the hotel or even more of other guests in the specific room (Goldstein et al., 2008).

Perceived Behavioural Control. The determinant PBC describes the perceived ease or difficulty to perform a specific behaviour. Factors like availability, financial means or available time might influence the Perceived Behavioural Control in both ways (Ajzen, 1991). PBC is special because it is directly linked to Intention and Behaviour in contrast to Attitude and Subjective Norms which are only related to Behaviour through the intermediary Intention. That direct influence on Behaviour is because perceived control often reflects actual control (Armitage & Conner, 1999). PBC is directly proportional to the summed multiplication of each control belief (c) about a particular control factor that facilitates or impedes the behaviour and the perceived power (p) of the according control factor (Ajzen, 1991):

$$PBC \propto \sum p_i c_i.$$

2.4 Two additional dimensions: Moral Obligation and Self-Identity

According to Ajzen (1991), the TPB is open to additional variables. He argues that in specific contexts and for certain behaviours, an extension of the TPB model may increase the predictive power. This flexibility is not surprising as the TPB itself is an extension of the Theory of Reasoned Action with PCB as the additional variable.

This adaptability has been considered in many studies from the beginnings of the TPB (Shaw & Shiu, 2003). Already 1991, Beck and Ajzen included Moral Obligation to determine the intention to cheat, steal and lie. Furthermore, Kim & Han (2010) found a significant improvement in predicting intentions to pay conventional hotel prices in green hotels by including environmental concerns, perceived customer effectiveness and environmentally conscious behaviours. Shaw and Shiu (2003) added the two dimensions Ethical Obligation and Self-Identity and found an improvement in explaining the intention of UK consumers to

purchase fair trade grocery products. And Rivis and Sheeran (2003) found the additional predictor Descriptive Norms improving their research.

Moral Obligation. Beside the already mentioned studies of Beck and Ajzen (1991) or Shaw and Shiu (2003), Moral Obligation has also been included in the TPB model by Harding et al. (2007) to assess academic dishonesty. As it can be seen, Moral Obligation is usually included in investigations of unethical behaviour. The inclusion of a form of Moral Obligation in such an unethical behaviour context has been recommended by Ajzen (1991) and Beck and Ajzen (1991). To support this recommendation and to support the inclusion of Moral Obligation in this work, it is helpful to remember the nature of green consumption. Green consumption is a "complex ethical issue […] which involves questions of both individual and social morality" (Moisander, 2007, p.407). On that account, with consumer greenwashing being an unethical part of green consumption, moral considerations are inherently involved.

Self-Identity. The measure of Subjective Norms has been found to be regularly the weakest predictor of Intention and has therefore attracted criticism (Armitage & Conner, 2001). Inspired by sociology, it has been proposed to include Self-Identity in the TPB to overcome this weakness (Armitage & Conner, 1999). Self-Identity and its relation to Intention are based on identity theory, which understands the identity as a complex social construct. "The self is […] conceived as a collection of identities that reflect the roles that a person occupies in the social structure. Central to identity theory is the view that to understand action, or in more psychological terms, to understand and predict behaviour, it is necessary to conceive of the self and the wider social structure as being inextricably linked" (Terry et al., 1999, p.226).

Self-Identity as an additional predictor of Intention has been found to be useful in many studies. For example, Shaw & Shiu (2003) used Self-Identity to improve their explanation of decision-making processes of green consumers and Terry et al. (1999) included Self-Identity in the investigation of recycling behaviour. Another significant improvement due to Self-Identity was found by Sparks and Guthrie (1998) who wanted to find out about the intention to go on a diet low in animal fats. Furthermore, the studies of Armitage and Conner (1999), Terry et al. (1999) and Griskevicius et al. (2010) strongly support the inclusion of Self-Identity in the TPB.

The concept of Self-Identity and Subjective Norms are somehow related. While Subjective Norms deal with the question how important reference groups want to see the person, Self-Identity also includes how the person wants to see himself. These two aspects of Self-Identity are reflected in "[s]ocial image needs [which] are based on a person's concerns about how he or she is perceived by others and a desire to project a certain image to his or her social environment" (Blackwell et al., 2006, 300). The projection of a certain image can be supported by the consumption of products with the desired symbolic characteristics,

making the product a means to an end (O'Cass & Frost, 2002; Jackson, 2005; Blackwell et al., 2006, p. 300, Solomon, 2011, p.163). Hence, in a consumer context, the actual social image of a person depends to a certain extent on his consumption patterns.

On the other hand, individuals not only project their desired identity or self-concept to the environment, but they also project their perceptions of how others see them to themselves, "which implies that people see themselves as they imagine others to see them" (Solomon, 2011, p.200). And what others see of a person, includes first of all material goods like clothes, a car or the groceries. After all, consumption is not only linked to identity (Jackson, 2005), but to some extent, consumption also defines self-identity (Newholm & Shaw, 2007, Soron, 2010). In turn, self-identity motivates behaviour and therewith consumption (O'Cass & Frost, 2002; Jackson, 2005). Hence, self-identity and consumption recursively and reciprocally constitute and/or influence each other.

Self-discrepancy theory helps to better understand self-concept and self-identity. The theory assumes the existence of at least three distinctive self-concepts: the own actual self-concept, the own ideal self-concept and the perceived (ideal) concept that others have of the individual (Jackson, 2005). If any two of these concepts conflict with each other, a self-discrepancy will be the result. If the mismatch is between one's own actual self-concept and one's own ideal self-concept, the result may be a feeling of guilt. If the discrepancy is between one's own actual self-concept and the perceived self-concept that others have of the person, a feeling of shame or embarrassment is likely to accrue (Jackson, 2005). Those two discrepancies, in the context of consumer greenwashing, are potentially able to contribute to the explanation why individuals offset environmentally harmful behaviour and why they consume green products with status motives. The ideal self-concept of being pro-environmental, together with the actual self-concept of a person with less environmentally friendly behaviour, arouses the guilt that has to be offset in order to dissolve the discrepancy and cognitive dissonance. Equally, status consumption can prevent the rise of shame caused by the actual self and the persons perceived self from the perspective of others.

As it has been shown, several independent studies as well as identity theory convincingly support the integration of two additional factors to the TPB to better explain and predict the complex and assumed unethical behaviour of consumer greenwashing. Therefore, the two predictors Self-Identity and Moral Obligation were integrated in this study. Figure 3 illustrates the extended model of the TPB used in this study.

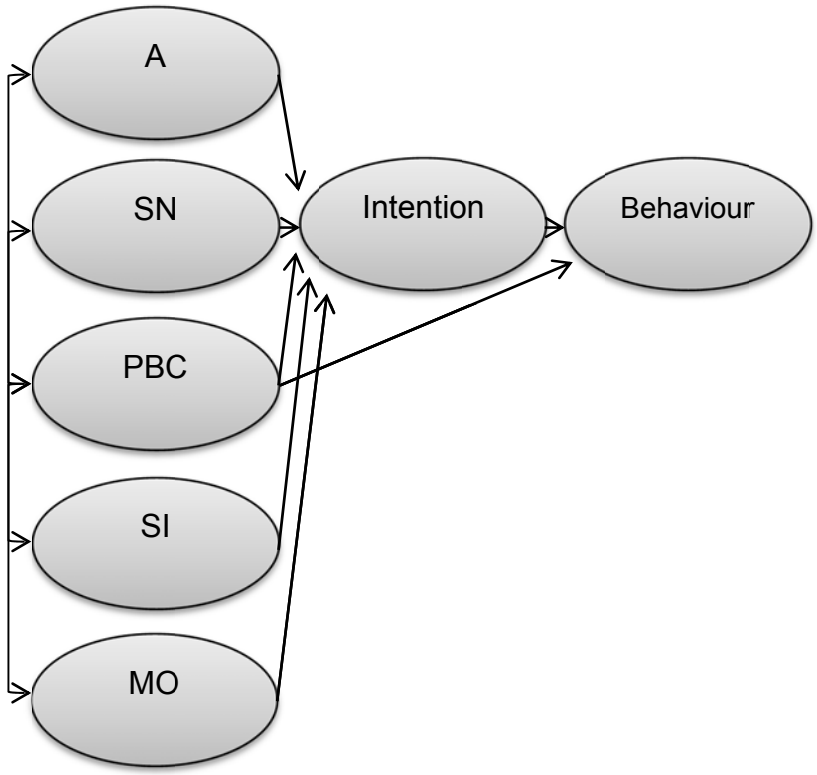

Fig. 2: Extended Theory of Planned Behaviour with Self-Identity (SI) and Moral Obligation (MO)

3 Research question and hypotheses

The purpose of this research is to further explore the motives that drive consumers to buy green products. The research question is, if unethical behaviours, i.e. offsetting or status consumption, are substantially present among consumers of green products and if the extended TPB is able to predict intentions to perform consumer greenwashing.

Theory implies that a consumer with a pro-environmental identity and respectively a consumer with a status focused identity is more likely to have higher intentions to offset or consume for status reasons. Thus, Self-Identity should be positively correlated to intentions to perform the according behaviour. This leads to:

H1a: Self-Identity has a positive impact on Intention to offset.

H1b: Self-Identity has a positive impact on Intention to consume for status reasons.

We also expect that the higher the perceived obligation to behave ethical, the less likely a consumer will intend to perform unethical behaviours such as offsetting or status consumption. Since Moral Obligation is coded such that higher scores imply a lower likelihood to offset or perform status consumption, however, a negative correlation is expected here. Thus, we state:

H2a: Moral Obligation has a negative impact on Intention to offset.

H2a: Moral Obligation has a negative impact on Intention to consume for status reasons.

Supporting the TPB and results of previous studies that investigated unethical behaviour, we expect that the independent variables of the TPB significantly contribute to the prediction of intentions to offset and to perform status consumption. Hence, our third hypothesis is:

H3: The independent variables of the TPB (Attitude, Subjective Norms and Perceived Behavioural Control) are significant predictors of the intention to greenwash.

As the literature suggests, an integration of Moral Obligation in the TPB could improve the predictions to offset and to perform status consumption. This improvement is mainly expected due to the unethical character of consumer greenwashing:

H4: Moral Obligation improves the prediction of consumer greenwashing intentions.

Finally, based on theory and previous research, we expect that Self-Identity can help in predicting intentions in the context of offsetting and status consumption. Thus, we assume:

H5: Self-Identity improves the prediction of consumer greenwashing intentions.

4 Methodology

4.1 Research design

In order to investigate consumer greenwashing and to assess the predictive utility of the two additional variables Self-Identity and Moral Obligation in the TPB, we conducted an exploratory online survey. The initial questionnaire was refined through experts' review and pretests among n = 27 participants. For each item, valid answers were given in 18 – 21 cases. Additionally, the test persons were given the possibility to comment each question. Questions concerning the past behaviour and demographics were reviewed using frequencies and the informative value, i.e., if an item was answered in the same way by most subjects the informative value can be seen as very low. Additionally, the questionnaire has been reviewed by randomly chosen German native speakers in order to assess how easily manageable the English questionnaire is for German students. The feedback indicated that there is no need to translate to German; thus, an identical questionnaire was answered by all students.

The inter-item-reliability for the variables of the TPB was measured using Cronbach's α. As a consequence, some items had to be deleted. Table 2 displays the α coefficients after deleting items. Although the construct "Subjective Norm" doesn't fulfill the required α value of at least .7, we decided to keep it temporarily in the study.

	I	A	SN	PBC	MO	SI
Offsetting	.871	.885	.644	.927	.942	.921
Status consumption	.890	.906	.771	.927	.963	.945

I, Intention; A, Attitude, SN, Subjective Norms; PBC, Perceived Behavioural Control; MO, Moral Obligation; SI, Self-Identity

Tab. 1: Reliabilities (Cronbach's α) in the pretest after deleting items

4.2 Instruments and variables

As described before, an extended version of the TPB was used in this study. Beside the traditional variables Intention, Attitude, Subjective Norms and Perceived Behavioural Control, the predictors Self-Identity and Moral Obligation were integrated in the TPB. Additionally, past behaviour related to pro-environmental consumer behaviour and demographics were surveyed.

The focal behaviour, consumer greenwashing, was split into two single behaviours and defined in the questionnaire as follows:

Offsetting in this context means that someone who shows environmentally unfriendly behaviour (e.g. driving a big car) wants to compensate, balance or counteract the impact on the environment (e.g. by buying "green" products), in order to ease his/her conscience or to eliminate a guilty feeling.

Status consumption means that someone buys "green" products in order to attain a good (e.g. environmentally friendly, pro-social) reputation or esteem.

All variables were assessed in an online questionnaire. The first section of the questionnaire assessed the *past behaviour* in order to introduce the participants to a green consumer context and make them think about their actual behaviour first, thus, make them remind their behaviour. The first question asked "What type of 'green' products do you buy?" (multiple choice including a range of 10 different products and the additional category "I don't buy green products consciously"). With such a question in the beginning, the participant initially gets an idea what a green product is or what is understood as a green product in this questionnaire. Question 2 was "Which kind of these activities do you perform?" (multiple choice with 9 environmentally/ethically friendly behaviours, such as recycling; composting; driving fuel-efficient etc.) Question 3 "How many times do you buy 'green' (e.g. organic, fair-trade, environmentally friendly) products per week?" and Question 4 ("How much money do you spend on this 'green' products per week?") completed section one of the questionnaire.

The behavioral constructs of TPB were measured based on the instruction of the TPB and former research (e.g. Ajzen, 1991, Beck & Ajzen, 1991; Sparks & Shepherd, 1992; Sparks &

Guthrie, 1998; Terry et al., 1999; Armitage & Conner, 1999; Armitage & Conner, 2001; Harding et al., 2007; Kim & Han, 2010). Most items were very similar among the mentioned studies and have been tested for validity. Each variable to be measured initially contained 5-6 items. A unipolar 7-point-semantic differential-type response format was chosen, as suggested by Ajzen (1991).

The variables in the TPB can be measured directly or indirectly. Indirect measures involve elicitation studies in which the salient beliefs (behavioural beliefs, normative beliefs and control beliefs) serve to elicit meaningful and significant items for the specific behaviour in question (Ajzen, 1991). However, the TPB does not necessarily require indirect measures, if the goal is to predict the behaviour rather than to completely explain it (Ajzen, 2010). Thus, we chose to measure the constructs in question directly. We used established scales for all constructs, but in some cases we modified or added items. Fig. 3 shows the items we used to measure the focal constructs. Note that, because consumer greenwashing consists of two distinct behaviours, all TPB constructs had to be assessed regarding each of the two behaviours separately.

Variable	Measurement		Source(s)
Attitudes Towards Consumer Greenwashing (4-point-semantic differential scales: good-bad; harmful-beneficial; wise-foolish; negative-positive)	Offsetting	Offsetting environmentally unfriendly behavior to ease the conscience is… Buying 'green' products in order to justify environmentally unfriendly behavior is…	Beck & Ajzen, 1991 Armitage & Connor, 1999
	Status consumption	Status consumption (e.g. buying 'green' products for display) is…	Beck & Ajzen, 1991 Armitage & Connor, 1999
Intention Towards Consumer Greenwashing (7-point scale from strongly disagree-strongly agree)	Offsetting	"I intend to buy 'green' products to offset environmentally unfriendly behaviour" "I may buy 'green' products to offset environmentally unfriendly behaviour in future" "I don't plan to buy 'green' products to offset environmentally unfriendly behaviour" "I want to buy 'green' products to offset environmentally unfriendly behaviour"	Beck & Ajzen, 1991 Armitage & Connor, 1999 Harding et al., 2007
	Status Consumption	"I intend to buy 'green' products for status reasons (e.g. reputation or esteem)" "I would never buy 'green' products for status reasons" "I may buy 'green' products for status reasons future" "I want to buy 'green' products for status reasons"	Beck & Ajzen, 1991 Armitage & Connor, 1999

Perceived Behavioural Control (7-point scale from strongly disagree-strongly agree)	Offsetting	"It is easy for me to offset environmentally unfriendly behaviour (e.g. by buying 'green' products)" "If I want to, I can offset environmentally unfriendly behaviour" "I am confident that I can offset environmentally unfriendly behaviour" "If it were entirely up to me, I am confident that I would be able to offset environmentally unfriendly behaviour".	Beck & Ajzen, 1991 Armitage & Connor, 1999 Harding et al., 2007
	Status Consumption	"It is easy for me to buy 'green' products for status reasons (e.g. reputation or esteem)" "If I want to, I can to buy 'green' products for status reasons" "I am confident that I can buy 'green' products for status reasons" "If it were entirely up to me, I am confident that I would be able to buy 'green' products for status reasons"	Beck & Ajzen, 1991 Harding et al., 2007
Subjective Norms (7-point scale from strongly disagree-strongly agree)	Offsetting	"Most people who are important to me think I should offset environmentally unfriendly behaviour to ease my conscience" "I feel under social pressure to offset environmentally unfriendly behaviour by buying 'green' products"	Armitage & Connor, 1999
	Status Consumption	"If I buy 'green' products for display/status reasons, most of the people who are important to me (e.g. family, friends) would not care" "Most people who are important to me think I should buy 'green' products for display/status reasons"	Beck & Ajzen, 1991 Armitage & Connor, 1999
Self-Identity (7-point scale from strongly disagree-strongly agree)	Offsetting	"I am concerned about the environment" "I want other people to see me as someone who has a pro-environmental lifestyle" "Being pro-environmental is an important part of who I am" "I don't want to be connected to pro-environmental issues"	Sparks & Shepherd, 1992 Terry at al., 1999
	Status Consumption	"I am concerned about my reputation" "I want other people to see me as someone with a high social status" "Having a good social status is part of who I am" "I don't think much about my reputation"	Sparks & Shepherd, 1992 Terry at al., 1999
Moral Obligation (7-point scale from strongly disagree-strongly agree)	Offsetting	"I would not feel guilty if I bought 'green' products to offset environmentally unfriendly behaviour" "I believe it would be morally wrong for me to buy 'green' products to offset environmentally unfriendly behaviour" "Buying 'green' products to offset environmentally unfriendly behaviour goes against my principles" "There is nothing wrong about buying 'green' products to offset environmentally unfriendly behaviour"	Beck & Ajzen, 1991
	Status Consumption	"I would not feel guilty if I bought 'green' products for status reasons" "I believe it would be morally wrong for me to buy 'green' products for status reasons" "Buying 'green' products for status reasons" goes against my principles" "There is nothing wrong about buying 'green' products for status reasons"	Beck & Ajzen, 1991

Fig. 3: Operationalization of the TPB-Constructs in our study

The last section of the questionnaire requested information about the age, gender, marital status, study programme, country of origin, area of living, income and university. Furthermore, in contrast to the past behaviour question in the first section, which assessed general green consumer behaviour, a question for the specific behaviours in interest, offsetting and status consumption, was positioned in the end of the questionnaire. Question 26 was "How often have you purchased 'green' products to offset other environmentally unfriendly behaviour (e.g. driving a big car) in the last week?" and "How often have you purchased 'green' products mainly in order to attain a good (e.g. pro-social, benevolent) reputation or esteem in the last week?" (7-point scale from never-always). This separation of past behaviour questions was done, because the behaviours in question are unethical and if positioned in the beginning, this could have influenced subsequent answers. Questions about unethical behaviour are challenged by the social desirability effect. Hence, in order to avoid this effect to rise already in the beginning and to carry over to subsequent questions, the questions were placed in the very end. Table 2 shows the results of reliability analysis for the TPB constructs. As we found already in the pretest, the scale of Subjective Norms applied to Status Consumption performs poorly. Previous research has shown that Subjective Norms is regularly the weakest predictor of Intention (Armitage & Conner, 2001). Therefore, for future research a substitution or modification of Subjective Norms might lead to better results and a better prediction of Intentions to perform a certain behaviour.

	I	A	SN	PBC	MO	SI
Offsetting	.856	.820	.717	.849	.838	.745
Status consumption	.867	.792	.462	.881	.812	.834

Tab. 2: Reliabilities (Cronbach's α) for the TPB constructs in the study

4.3 Sample description

As customary for explorative studies, we collected a non-probability convenience sample among students from two universities in Germany and one in the UK. Of the 238 participants, 64 students stated to be non-consumers of green products. Because this study investigates the motives of consumers who purchase green products, no matter how frequently, the cases of the non-consumers were excluded for further analyses.

A total of 174 suitable cases from three different universities were surveyed (140 participants from Germany and 34 from UK). The sample consisted of students in different fields of study with 32.8% studying in a bachelor degree course and 58% studying in a master's programme. Male students outnumbered female students by more than 100%: 54 female students (31%) and 120 male students (69%) took part in the online survey. This inequality of

gender is due to the two German universities, at which the students are nearly exclusively soldiers of the German Federal Armed Forces (Bundeswehr) – a profession dominated by males.

While the age structure is similar in all three universities, with the majority being between 21 and 26 years old, the income differs clearly. It is not surprising that the German students have a higher income than the students from Portsmouth, due to the fact that the students of the two German universities receive a full officer's salary during their studies. This fact may influence green behavior, as German students can easily afford to buy the usually more expensive green products.

	Germany	UK	Total
n	140	34	174
Male	101	19	174
Female	39	15	174
Age			
18-20	2	1	3
21-23	59	8	67
24-26	65	12	77
27-29	14	4	18
30 and older	0	9	9
Income per month*			
Under £450 / 500 €	0	11	11
£ 451 - £900 / 501 – 1000 €	0	5	5
£ 901 - £1300 / 1001 – 1500 €	14	2	16
£ 1301 - £1750 / 1501 – 2000 €	104	3	107
£ 1751 and more / 2001 € and more	13	6	19

* 16 respondents abstained from the question concerning their income

Tab. 3: Sample description

4.4 Analyses

Collected data were analysed using SPSS 19 for Microsoft Windows. Indices for each variable of the TPB were computed using the mean of the appropriate items. All variables were coded such that higher scores imply greater offsetting and status consumption.

In order to validate hypotheses 1 and 2, a correlation analysis was conducted and for the validation of hypotheses 3, 4 and 5, a hierarchical regression analysis was performed. To see whether or not there are significant differences between the British and German group, an independent two-sample t-test was performed (a previous Kolmogorov-Smirnov-test showed that almost all variables are normally distributed). As it can be seen in Table 5, the means do not differ significantly except for the variable Self-Identity in the case of offsetting.

As only one variable shows significant differences between the samples, further analyses were performed for the whole sample as an unit. Other t-test, testing for significant differences between gender or area of living (urban, suburban, rural) did not show peculiarities either.

		Offsetting			Status consumption		
		mean	SD	Signifi-cance*	mean	SD	Signifi-cance*
Intention	Germany	3.411	1.480	.058	2.804	1.462	.467
	UK	3.963	1.653		2.603	1.337	
Attitude	Germany	3.527	1.039	.544	4.125	1.148	.991
	UK	3.654	1.315		4.123	1.285	
Subjective Norms	Germany	2.757	1.338	.107	2.850	1.293	.714
	UK	3.191	1.642		2.941	1.319	
Perceived Behavioural Control	Germany	4.223	1.263	.652	3.986	1.443	.440
	UK	4.110	1.479		3.765	1.683	
Moral Obligation	Germany	4.238	1.335	.400	4.043	1.298	.267
	UK	4.015	1.558		3.757	1.506	
Self-Identity	Germany	4.550	1.145	.002	4.446	1.327	.422
	UK	5.235	1.002		4.243	1.312	

Note: a F-test showed no significant differences in the variances of the two sample groups

*two-sided significance; SD, standard deviation

Tab. 4: t-tests (Germany/UK)

5 Results

	Offsetting			Status consumption		
	Mean	SD	Variance	Mean	SD	Variance
Intention	3.519	1.527	2.330	2.764	1.437	2.066
Attitude	3.552	1.095	1.200	4.125	1.172	1.375
Subjective Norms	2.842	1.149	1.982	2.868	1.295	1.676
Perceived Behavioural Control	4.201	1.304	1.701	3.943	1.490	2.221
Moral Obligation	4.194	1.380	1.903	3.987	1.341	1.799
Self-Identity	4.684	1.149	1.319	4.407	1.295	1.750

Tab. 5: Descriptive statistics

Table 5 illustrates the descriptive statistics of the TPB variables in the offsetting and status consumption context. Asked for the frequency of performing offsetting and status consumption in the last week, the participants answered as shown in table 6. For both behaviours, “never” was answered most frequently with a percentage close to 50%. However, this means that the other 50% admitted that they have been offsetting or consuming green products for status reasons at least sometimes. The range of answers from

the centre of the scale (4) to the extreme always (7) accounts for 22.4% (offsetting) and 21.3% (status consumption). Thus, more than one fifth of the participants reported to greenwash from moderate to high frequency.

	Offsetting			Status consumption		
	Frequency distribution	percentage	Cumulated percentage	Frequency distribution	percentage	Cumulated percentage
1 (never)	84	48.3	48.3	85	48.9	48.9
2	35	20.1	68.4	29	16.7	65.5
3	16	9.2	77.6	23	13.2	78.7
4	18	10.3	87.9	21	12.1	90.8
5	19	10.9	98.9	12	6.9	97.7
6	0	0.0	98.9	3	1.7	99.4
7 (always)	2	1.1	100	1	0.6	100

Tab. 6: Self-report of offsetting and status consumption frequencies

The self-reported behaviour is significantly ($p < .01$) correlated with the respective intention towards the behaviour. The correlation coefficient between self-report of the offsetting frequency in the last week and the intention to offset is .514 and .507 for status consumption respectively. These highly significant correlations support the TPB which assumes that intention is the best predictor of actual behaviour. Furthermore, the intention to offset and the intention to perform status consumption ($r = .253$) and the self-reports of offsetting and status consumption ($r = .564$) are significantly correlated at the .01 level. These correlations indicate that offsetting and status consumption are somehow related and support the aggregation to the theoretical construct of consumer greenwashing.

As table 7 displays, most variables for offsetting and status consumption are significantly correlated. For offsetting, it is remarkable that Self-Identity is only significantly ($p < .05$) correlated to Moral Obligation, and even this correlation is only low to moderate. The negative correlations are not significant. Of special interest in the TPB are the correlations of the variables with the predictor Intention. In relation to Intention, all variables, except for Self-Identity, are moderately to highly correlated on a .01 significance level.

For status consumption, Self-Identity is significantly correlated to all variables except for Subjective Norms. In fact, Subjective Norms are only significantly correlated to Intention. Here, Intention shows significant ($p < .01$) correlations in relation with all variables. Furthermore, it is notable that the highest correlation is between Moral Obligation and Intention. Note that, as mentioned in Section 3, all variables were coded such that higher scores imply a greater likelihood to perform the behaviours in question. Thus, a positive correlation between Moral Obligation and Intention implies that consumers with less moral

consideration (higher score on Moral Obligation) are more likely to offset eco-guilt or to consume green products for status reasons.

	I	A	SN	PBC	MO	SI
Offsetting						
Intention (I)	1					
Attitude (A)	.421**	1				
Subjective Norms (SN)	.408**	.224**	1			
Perceived Behavioural Control (PBC)	.346**	.229**	.139	1		
Moral Obligation (MO)	.399**	.460**	.345**	.246*	1	
Self-Identity (SI)	.062	-.052	-.062	.078	.172*	1
Status consumption						
Intention (I)	1					
Attitude (A)	.252**	1				
Subjective Norms (SN)	.363**	.023	1			
Perceived Behavioural Control (PBC)	.277**	.102	-.007	1		
Moral Obligation (MO)	.458**	.242**	.004	.336**	1	
Self-Identity (SI)	.317**	.217**	-.076	.188*	.262**	1

** significant at the .01 level

* significant at the .05 level

Table 7: Pearson correlations among the TPB variables

Among the 174 participants, the most frequently purchased goods are organic foods, purchased by 120 persons, followed by local food (113), energy-saving products (108), eco-friendly cleaning products (42), organic cosmetics (18) and fair trade / organic clothes (14 / 13). Significant ($p < .01$) correlations exist between the purchase of organic and fair-trade clothes (.237), organic and local food (.210) and energy-saving products and eco-friendly cleaning products (.220). It can be argued that consumers who already purchase green products are more likely to purchase green products for the same area of life (e.g. food, clothes, home).

The most frequently performed activity as indicated by the respondents are recycling (147), turning down the heating (122), carsharing/carpooling (120), using a bike instead of a car or public transport (94), driving fuel-efficient (84), using public transport instead of a car (71), composting (55) and avoiding eco-unfriendly products (41). Significant ($p < .01$) correlations exist between the activities recycling and composting (.223), recycling and waste separation (.227), turning down the heating and driving fuel-efficient (.204) and using the bike instead of a car/public transport and using public transport instead of a car (.279). These results indicate that persons who perform a certain activity in one category (e.g. waste, energy/fuel saving) are likely to perform other activities from the same category.

The hierarchical regression analysis (Table 8) tested the predictive value of the TRA, TPB and the two additional variables Moral Obligation and Self-Identity. In a first step, the TRA was tested for its predictive accuracy, in a second step the TPB, in a third and fourth step the TPB including one of the two additional variables and in the fifth and last step the TPB including both additional variables.

	Offsetting				Status consumption			
	r	b	R	R^2	r	b	R	R^2
Step 1: Theory of Reasoned Action								
Attitude	.484	.347*			.299	.244*		
Subjective Norms	.358	.330*	.530	.273	.397	.358*	.438	.182
Step 2: Theory of Planned Behaviour								
Attitude	.416	.298*			.268	.219*		
Subjective Norms	.335	.309*			.396	.357*		
Perceived Behavioural Control	.275	.235*	.577	.321	.243	.252*	.505	.242
Step 3: Moral Obligation								
Attitude	.344	.247*			.170	.138		
Subjective Norms	.299	.275*			.401	.361*		
Perceived Behavioural Control	.255	.218*			.128	.133		
Moral Obligation	.152	.137	.588	.331	.408	.381*	.614	.363
Step 4: Self-Identity								
Attitude	.422	.303*			.201	.164		
Subjective Norms	.340	.314*			.420	.379*		
Perceived Behavioural Control	.265	.227*			.199	.207*		
Self-Identity	.106	.080	.582	.323	.295	.271*	.568	.306
Step 5: Moral Obligation + Self-Identity								
Attitude	.341	.245*			.127	.104		
Subjective Norms	.300	.277*			.420	.378*		
Perceived Behavioural Control	.249	.205*			.105	.109		
Moral Obligation	.175	.158*			.232	.213*		
Self-Identity	.137	.103	.597	.337	.366	.342*	.646	.400

r, regression coefficient; b, standardised regression coefficient; R, correlation coefficient; R^2 coefficient of determination (adjusted)

* Significant regression coefficient with $p < .05$

Tab. 8: Hierarchical regression analysis for Intention

In both the TRA and TPB, all variables contribute significantly to the prediction of intentions. However, the TPB proves to be superior to the TRA. Perceived Behavioural Control has a significant regression coefficient across both intentions. The additional variance accounted for is 4.8% (increment in $R^2 = .048$) for offsetting and 6% for status consumption.

The multiple correlation of the TPB variables including Moral Obligation with Intention is .588 for offsetting and .614 for status consumption, explaining 33.1% / 36.3% of the variance (offsetting/status consumption). The increment of R^2 as compared to the TPB is 1% for offsetting and 12.1% for status consumption. In the context of offsetting Moral Obligation does not show significant improvements to the model. However, Moral Obligation shows substantial and statistical significant improvements in prediction of the intention to perform status consumption. In fact, Moral Obligation in this model (step 3) is the only significant predictor together with Subjective Norms and contributes most to the predictive accuracy (b = .381).

The inclusion of Self-Identity accounts for lower increments in prediction as compared to the TPB: 0.2% for offsetting and 6.4% for status consumption. While Self-Identity does neither significantly nor substantially contribute to the prediction of offsetting, it does in the context of status consumption. Although for status consumption the increment of explained variance is only of low to moderate magnitude, Self-Identity does still have the second-highest value for b and therefore, much of the predictive accuracy is due to Self-Identity.

Finally, the model in step 5 of the hierarchical regression analysis, including both Moral Obligation and Self-Identity, explains 33.7% of the variance in intentions to offset and 40% of the variance in intentions to perform status consumption. The increment of explained variance compared to the TPB is 1.6% for offsetting and 15.8% for status consumption but compared to the model in step 3 (TPB + Moral Obligation) only 0.5 % for offsetting and 3.7% for status consumption. Although Moral Obligation in the last step shows statistical significance for offsetting, the contribution is still the lowest among the other significant variables.

As the hierarchical regression analysis revealed, Moral Obligation as well as Self-Identity contribute to the prediction of greenwashing behaviour. However, statistical significant and substantial improvements are only observable for status consumption. Although Moral Obligation shows a significant contribution in explaining offsetting intentions (step 5), an inclusion in the model seems to be of little utility due to the low predictive accuracy (b = .158). Similarly, Self-Identity does not improve the prediction of offsetting intentions. Hence, from a practical point of view, the TPB without the two additional variables seems to be the best model to predict offsetting intentions although the explained variance accounted for is only 32.1%.

In the context of status consumption, the inclusion of both additional variables shows significant and substantial improvements in the prediction of intentions. Hence, an inclusion of both Moral Obligation and Self-Identity seems reasonable. However, one might argue that

the increment in explained variance due to the integration of Self-Identity is not substantially big enough and therefore one might choose to add Moral Obligation only.

6 Discussion and limitations

This study investigated if consumers of green products show greenwashing behaviour. As the results revealed, half of the participants admitted that they buy green products in order to offset eco-guilt or for status reasons at least sometimes. More than a fifth of the participants admitted to even greenwash from a moderate to high frequency. Thus, the assumptions that consumers are not only driven by eco-motives and that they perform unethical greenwashing was confirmed. At this point it has to be noted that the attribute unethical in this context is used to put greenwashing in contrast to the ethical motives to conserve the environment rather than to judge the behaviour. Such a judgement would not be fair as not only one, but several motives influence behaviour. Hence, a greenwasher may have eco-motives at the same time. Unethical, therefore, only describes the presence of other than eco-motives.

It was suggested that Self-Identity (H1) and Moral Obligation (H2) are positively correlated to Intentions to offset and to perform status consumption. Both hypotheses were confirmed. Furthermore, it was confirmed that the original variables of the Theory of Planned Behaviour are significant predictors of the intention to greenwash (H3).

Hypothesis 4 suggested that Moral Obligation improves the prediction of consumer greenwashing intentions. It did in the context of status consumption and even contributed more than any other variable to the predictive accuracy. However, in the context of offsetting, Moral Obligation did not show significant predictive improvements. A possible reason might be that offsetting, although being a self-interest act, still includes the morality to bear responsibility for one's own behaviour. Thus, as long as offsetting does not lead to licencing, it might be seen as a morally correct behaviour.

Hypothesis 5 suggested that Self-Identity improves the prediction of consumer greenwashing intentions. While no significant improvements were found in the offsetting context, Self-Identity significantly improved the prediction of status consumption. That Self-Identity did not significantly contribute to the prediction of offsetting might be due to the chosen identity. As a pro-environmental identity is not directly linked to offsetting, another identity construct with statements in the questionnaire like "It is part of my personality to bear responsibility for my behaviour" might have led to better results. However, a retest with a more representative sample might also lead to different results with Self-Identity playing a more important role for both offsetting and status consumption.

As the literature review showed, segmentation studies still struggle to locate the green consumer and green consumer segments. The results of this study suggest taking unethical

behaviours and motivations into consideration. Furthermore, it has to be recognised that green consumers and consumers of green products are not necessarily congruent market segments.

Furthermore, as both offsetting and status reasons seem to be involved in the consumption of green products, advertising might want to use this knowledge in promoting green products with guilt appeals (compare also Jiménez & Young, 2008) and status appeals in order to activate more consumers.

However, several limitations have to be considered for the interpretation of the results. Because an online survey with a non-probability convenience sample was employed, a statistical inference from the sample to the population is not valid, thus external validity is not given. A bias is likely to exist due to the reason that only students were surveyed. Furthermore it has to be pointed out that the TPB investigates a specific behaviour or bundle of specific behaviours. Thus, the results of this study are only valid for offsetting and status consumption as described in the questionnaire. Especially, no generalisation to related behaviours is admissible.

Another limitation is due to the cultural context (Mostafa, 2007). The investigation took part in two Western European countries with relatively individualistic cultures ("Cultural Dimensions", 2009). Also most of the literature originates from more individualistic cultures. An influence on the variables of the TPB and more generic on offsetting and especially on status consumption is most likely to exist. Thus, the results of this research have to be limited to the two countries Germany and United Kingdom (Freestone & McGoldrick, 2008).

Due to the investigation of unethical or socially undesirable intentions and behaviours, the danger of a socially desirable response bias is given (Beck & Ajzen, 1991). However, Beck and Ajzen (1991) and Armitage & Conner (2001) found only low effects of socially desirable responses in their TPB questionnaire. As the relatively high levels of self-reported offsetting and status consumption indicate, effects of social desirability might play a minor role in this research, too.

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