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REVIEW

How do I see myself? A systematic review of identities in pro-environmental behaviour research

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ABSTRACT

Encouraging pro-environmental behaviour (PEB) is an environmental and societal concern. Encouraging PEB focussing on how consumers see themselves (their identity) has blossomed. However, a theoretical assessment of this research is missing. Three main identity theories seem to best explain the research, specifically, and two-fold, identity, and social identity theory (SIT), collectively known as the unified identity theory (UIT), and place identity theory (PIT). As these theories overlap more than differ in their understanding of identity, we argue that combining these theories is needed to avoid redundancies in identity theorizing, provide a universal approach to identity in terms of the processes and outcomes, and explain the PEB research most succinctly. Therefore, we understand identity similarly between the theories and offer a universal identity theory approach based on the theoretical definitions and assumptions. Finally, we demonstrate how the theory can be used to explain the research. Next, research was identified by conducting a systematic review using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines, where 62 studies were relevant. Multiple identities relevant for a given PEB are assumed and evidenced: 99. Identities are assumed to be either individually-, group-, and/or place-focused, drawing on the specific subsets of the universal theory: identity theory, social identity theory, and place identity theory, respectively. Identities are assumed to relate to behaviour, where identity increased PEB with medium effect sizes. Finally, to move the field forward, we provide a theoretical framework of how to test identities in relation to other psychological variables relevant for PEB research.

1 | INTRODUCTION

1.1 | Consumer behaviour as a type of pro-environmental pehaviour

It is increasingly understood that our consumption patterns are not sustainable in the longer term, especially given the many environmental problems caused by production and consumption (Allen et al., 2018; United Nations Environment Programme (UNEP), 2012). To overcome the increasing threats to the environment, society needs to steer towards a more sustainable development path (World Economic Forum, 2019). An important way to reach a more sustainable society is to change individual consumption patterns among consumers (De Groot, Schubert, & Thøgersen, 2016; Schuitema & De Groot, 2015). Consumer behaviours that are focused on harming the environment as little as possible (e.g., replacing your energy-lurking household appliance for an energy-efficient appliance, showering less long) or benefiting the environment (e.g.,refraining from purchasing

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environmentally harmful products, donating money to environmental charities) are typically regarded as "pro-environmental behaviour" (PEB; e.g., Gilal, Zhang, Gilal, & Gilal, 2019; Nguyen, Lobo, Nguyen, Phan, & Cao, 2016; Rahimah, Khalil, Cheng, Tran, & Panwar, 2018), as PEB is defined as those behaviours that "harms the environment as little as possible or even benefits the environment" (Steg & Vlek, 2009; p. 309). Therefore, the present research will focus on PEB, which includes a whole array of different consumer behaviours. That is, PEBs are actions that minimise the negative impact on (such as preserving and preventing damage to), and/or promoting improvements to, the natural and the built world (Kollmuss & Agyeman, 2002). The built world is the "the human-made space in which people live, work, and recreate on a day-to-day basis" (Roof & Oleru, 2008, p. 24), and PEBs thus span the whole of nature and human-made space. Finally, there is a need for engaging more people in consumer behaviours, which we know are PEBs (Stern, 2000), as well as engaging them in a wider variety of PEBs, which alter the whole of nature and human-made space.

1.2 | Theories for understanding PEB research

In recent years, there has been a surge in research on understanding how to encourage PEBs (Chernev & Blair, 2015; Gershoff & Frels, 2015). Specifically, a meta-analysis showed that research in this field was largely based on four dominant theories (Klöckner, 2013), namely, the theory of planned behaviour (Ajzen, 1991), the norm-activation theory (Schwartz, 1992), the value–belief norm theory (Stern, 2000), and habits (Verplanken & Aarts, 1999). However, combining the key constructs of these theories accounted for only 36% of variance explained in a variety of PEBs (Klöckner, 2013), which implies other important factors might be missing in these theories. One factor that seems to have been overlooked in these main theories is identity.

1.3 | Identity in PEB research: Theoretical perspectives

Over the last decade, a new stream of research emerged that investigated how identity influences PEBs (Chernev & Blair, 2015; Gershoff & Frels, 2015). How people see themselves, referring to identity (Pronin, 2008), is difficult to define because the definition seems to depend on which theoretical framework is used. In PEB research, identities seem to be best explained within the framework of either identity theory (Stryker & Burke, 2000), social identity theory (Tajfel & Turner, 1979), whereby an integration of both approaches has been argued (Stets & Burke, 2000, formerly known as the "Unified Identity Theory"), and place identity theory (PIT; Proshansky, Fabian, & Kaminoff, 1983). As these theories overlap more than differ in their understanding of identity, we argue that combining these theories is needed to avoid redundancies in identity theorizing, provide a universal approach to identity in terms of the processes and outcomes, and explain the PEB research most succinctly. Therefore, from this point forward, we understand identities in terms of this universal identity approach. According to our universal identity approach, we first define identity on three levels. Level 1 is where we define an individually focused identity as how people label, describe, and recognize one's self individually or personally (Stryker & Burke, 2000). We will refer to this Level 1 as an identity explained by PEB-identity theory (see Table 1, Row 1). Level 2 is where we define a group-focused identity as how people label, describe, and recognize one's self as part of a group (Tajfel & Turner, 1979). We will refer to this Level 2 as an identity explained by PEB-social identity theory (see Table 1, Row 2). Level 3 is where we define a place-focused identity as how people label, describe, and recognize one's self as part of a place (Proshansky et al., 1983). We will refer to this Level 3 as an identity explained by PEB-place identity theory (see Table 1, Row 3).

1.4 | Identity in PEB research: Empirical evidence

Identity has been associated with a wide range of human behaviours (Akerlof & Kranton, 2010), including PEBs (Khare, 2015a, 2015b). Research investigating the associations between identity and PEB started in 1992 (Sparks & Shepherd, 1992). Subsequently, increasingly more research has been conducted on this topic (Dagher & Itani, 2014; Graham-Rowe, Jessop,& Sparks, 2015; Hamerman, Rudell,& Martins, 2018). However, a theoretical assessment of this research is missing. Therefore, we use our universal identity approach to explain the PEB research. As a first step in this direction, we conduct a systematic review using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The guides enable us to identify the relevant studies for this theoretical assessment. By adhering to these guides, researchers can replicate our work and update our review when researchers publish new findings. Furthermore, from this review, we are able to ascertain what assumptions of our identity approach are evidenced or not in the research allowing for future research to see and build on the existing knowledge and gaps. Finally, to move the field forward theoretically, practically, and methodologically, we provide a theoretical framework of how to test identities in relation to other psychological variables relevant for PEB research (Figure 1).

Before we expand on the research aims and conduct the review, we provide a foundation for our universal identity approach by first highlighting the main theories that initially have informed our research, namely, identity theory (Stryker & Burke, 2000), social identity theory (Tajfel & Turner, 1979), whereby an integration of both approaches informed our research specifically (Stets & Burke, 2000), and place identity theory (Proshansky et al., 1983). These theories can be used as conceptual frameworks to best explain identity-PEB research because despite the difficulties in ascertaining which theories seem to be relevant for this context, when references to theory were clearly given, these frameworks most frequently were used, for example, identity theory (Murtagh, Gatersleben, & Uzzell, 2012), social identity theory (Fielding, Terry, Masser, & Hogg, 2008), and place identity theory (Halpenny, 2010). Therefore, these offer the most relevant key insights to identity–behaviour interactions.

TABLE 1 Definitions and assumptions of PEB levels of identity (PEB-identity, -social identity, and -place identity theory)

Row number	Definitions (D)		Evidence: Yes [✓] Unsure [?]
1.	D1a. PEB–Identity theory	Level one is where we define an individually-focused identity as follows: How people label, describe and recognize one's self individually/personally (Stryker & Burke, 2000) which we refer to as an identity explained by PEB-identity theory.	✓
2.	D1b. PEB–Social identity theory	Level two is where we define a group-focused identity as follows: How people label, describe and recognize one's self as part of a group (group-focused identity) with which the group has been labelled, described, and recognized (Tajfel & Turner, 1979), which we refer to as an identity explained by PEB-social identity theory.	✓
3.	D1c. PEB–Place identity theory	Level three is where we define a place-focused identity as follows: is how people label, describe and recognize one's self as part of a place (place-focused) with which the place has been labelled, described, and recognized (Proshansky et al., 1983), which we refer to as an identity explained by PEB-place identity theory.	✓
	Assumptions (A)		
4.	A1a. PEB–Identity theory	Any one person can have plural individually-, focused identities.	✓
5.	A1b. PEB–Social identity theory	Any one person can have plural group-focused identities.	✓
6.	A1c. PEB–Place identity theory	Any one person can have plural place-focused identities.	✓
7.	A2a. PEB–Identity theory	The many identities individually-focused are considered important for any type of behaviour, individually-, group-, or place-focused PEB, irrespective of whether the group/place with said identity is present.	✓
8.	A2b. PEB–Social identity theory	The many identities group-focused are considered important for any type of behaviour, individually-, group-, or place-focused PEB, irrespective of whether the group/place with said identity is present.	✓
9.	A2c. PEB–Place identity theory	The many identities place-focused are considered important for any type of behaviour, individually-, group-, or place-focused PEB, irrespective of whether the group/place with said identity is present.	✓
10.	A3a. PEB–identity theory	These individually-focused identities can be made salient depending on the context a person is in, which in turns promotes particular types of PEBs, individually-, group-, or place-focused.	✓
11.	A3b. PEB–Social identity theory	These group-focused identities can be made salient depending on the context a person is in, which in turns promotes particular types of PEBs, individually-, group-, or place-focused.	?
12.	A3c. PEB–Place Identity theory	These place-focused identities can be made salient depending on the context a person is in, which in turns promotes particular types of PEBs, individually-, group-, or place-focused.	?
13.	A4a. PEB-Identity theory	Consumers hold these identities in mind in a specific order that can change, and is referred to as the hierarchy of salience. That is, there is a hierarchy of	✓

(Continues)

TABLE 1 (Continued)

Row number	Definitions (D)		Evidence: Yes [✓] Unsure [?]
		salience of these many identities individually-focused.	
14.	A4b. PEB-Social Identity theory	Consumers hold these identities in mind in a specific order that can change, and is referred to as the hierarchy of salience. That is, there is a hierarchy of salience of these many identities group-focused.	✓
15.	A4c. PEB-Place Identity theory	Consumers hold these identities in mind in a specific order that can change, and is referred to as the hierarchy of salience. That is, there is a hierarchy of salience of these many identities place-focused.	?
16.	A5a. PEB-Identity theory	Consumers can have competing identities which means before any behaviour occurs, the many identities individually-focused need to be similar in behavioural expectations for behaviour to occur.	✓
17.	A5b. PEB-Social Identity theory	Consumers can have competing identities which means before any behaviour occurs, the many identities group-focused need to be similar in behavioural expectations for behaviour to occur.	✓
18.	A5c. PEB-Place Identity theory	Consumers can have competing identities which means before any behaviour occurs, the many identities place-focused (PEB place identity theory) need to be similar in behavioural expectations for behaviour to occur.	?

Abbreviations: A, assumptions; D, definitions; PEB, pro-environmental behaviour.

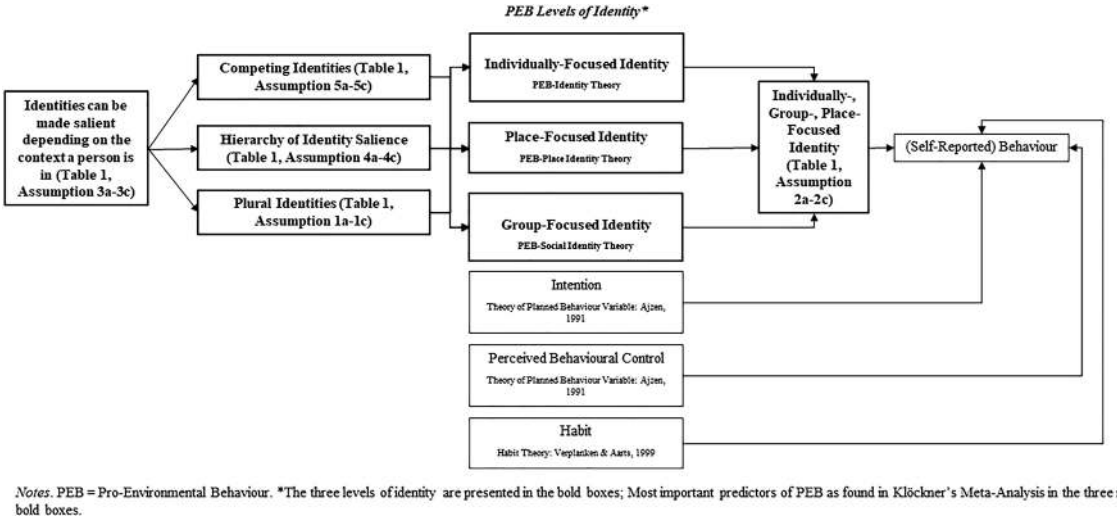

FIGURE 1 The identity-comprehensive action determination model, including key direct predictors of PEB from Klöckner's meta-analysis (2013). The model has been extended by including the assumptions assessed in the identity-review (Table 1)
Notes. PEB, pro-environmental behaviour. *The three levels of identity are presented in the bold boxes; Most important predictors of PEB as found in Klöckner's meta-analysis in the three non-bold boxes

1.5 | Theoretical foundations of identity

Identity theory suggests identity and behaviour are linked by their shared meaning (Stryker & Burke, 2000). That is, when an identity is in the foreground (salient), this identity will more likely predict behaviour when the meaning of the behaviour corresponds to the meaning of the *individual identity*. However, from a social identity perspective, if a person identifies with a particular group (the *group identity* is salient), then he/she internalises the norms of that group and is more likely to act in accordance with those norms (for further discussion, see Stryker & Burke, 2000; Tajfel & Turner, 1979). Hence, an integration of both perspectives implies that when an identity is salient in a situation, the outcomes for persons include common or shared group outcomes (social identity theory perspective) and reciprocal role outcomes (identity theory perspective; for further discussion regarding an integration of both approaches. see Stets & Burke, 2000). Place

identity theory can be interpreted in the same way as identity theory and social identity theory. That is, the link between identity and behaviour is its shared meaning. However, these meanings are in accordance with the place (*place identity*) rather than the reciprocal individual roles corresponding to behaviour (identity theory) or the norms of the group corresponding to the common or shared group outcomes (social identity theory). Place identity refers to the part of people's personal identity that is based on the physical and symbolic features of places (connections and history) where people live (Proshansky, 1978; Proshansky et al., 1983).

There is a key similarity and difference between the three identity theories. With regard to the similarity, identity theory (Stryker & Burke, 2000), social identity theory (Stryker & Burke, 2000; Tajfel & Turner, 1979), and place identity theory (Proshansky et al., 1983) all suggest that when an identity is salient, this identity will more likely predict behaviour when the meaning of the behaviour corresponds to the meaning of the identity, which then leads to common, shared, and reciprocal outcomes. The key difference between the three theories, however, is the type of identities: individually focused identity as per identity theory (Stryker & Burke, 2000), group-focused identity as per social identity theory (Stryker & Burke, 2000; Tajfel & Turner, 1979), or place-focused identity as per place identity theory (Proshansky et al., 1983) and the corresponding, common, shared, and reciprocal outcomes/behaviours: individually-, group-, or place-focused, respectively.

Finally, although the identity theories (identity theory, social identity theory, and place identity theory) can be applied in multiple contexts, here, we assume them differently based on the current applications of identity in PEB research. That is, how identity is assessed in our context seems to be different to how identities are assumed. Therefore, how we assume identities in this context needs updating. To avoid confusing on how we interpret the assumptions of identity based on our context findings, with the original assumptions of the three theories of identity, we label our theories differently, namely, PEB levels of identity, specifically, PEB-identity, -social identity, and -place identity theory. These PEB levels of identity incorporate assumptions of existing three theories on identity while including what we have observed so far of the literature on identity in PEB research. As a caveat, we note that our PEB levels of identity are actively under development, so our understanding of the PEB levels of identity act as a basis for further modification in light of research. Based on our context findings, we present the assumptions of PEB levels of identity. However, first, we explicitly state how identities are assumed in previous research and how they are assumed differently in this research.

1.6 | The concept of identity in theories of identity versus PEB research

The process of forming an identity is identification in identity theory (McCall & Simmons, 1978; Stets & Burke, 2000), self-categorisation in social identity theory (Stets & Burke, 2000; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), and, although not explicitly named, place identity theory refers to people all-encompassing the reciprocity between themselves and nature into their self-concepts (Leary, Tipsord, & Tate, 2008; Naess, 1973; Nisbet, Zelenski, & Murphy, 2009; Roszak, 1995; Tam, 2013). To mirror, in PEB research, we propose the process of forming an identity is how people label, describe, and recognize one's self individually/personally (individually focused identity; Stryker & Burke, 2000), as part of a group (group-focused identity; Tajfel & Turner, 1979) and/or as part of a place/non-human focused (place-focused identity; Proshansky et al., 1983). Furthermore, identities refer to specific roles in identity theory (Stets & Burke, 2000), yet, in PEB research, we propose individually focused identities refer to but are not restricted to the concept of roles (individually focused identity; Stryker & Burke, 2000).

1.7 | PEB levels of identity evidence

1.7.1 | Assumptions 1a–c: The possibility of multiple identities

PEB theories of identity, specifically, PEB-identity, -social identity, and -place identity theory, first assume *any one person can have plural individually-*, *group-*, *place-focused identities*, respectively (Assumptions 1a–1c; Table 1, Rows 4–6). Empirical evidence has identified plural individually (Gatersleben, Murtagh, Cherry, & Watkins, 2017; Murtagh et al., 2012), group- (Dunlap & McCright, 2008), and place-focused identities (Halpenny, 2010). Furthermore, as individuals can have plural identities, there seems to be a trend in identity research towards introducing new identity types to see how they interact with each other to explain behaviour. However, the large number of identities studied, without an overview, makes it difficult to know which plural identities are relevant in this context. Hence, we have the first two related aims that will contribute to the literature; as with a systematic review, we are able to conclude the extent to which we have evidence for our first assumptions and by omission, and we are able to identify what is less well evidenced. Therefore, future research can build on the existing knowledge and gaps. Hence, in the present study, we aim to provide a comprehensive list of each identity empirically tested to be relevant in a PEB context (Aim 1). Also, in light of the PEB levels of identity, specifically, PEB-identity, -social identity, and -place identity theory, we provide a comprehensive list of which theory links to which identity in question (Aim 2).

1.7.2 | Assumptions 2a–c: Multiple identities' relate to any PEB type

PEB theories of identity, specifically, PEB-identity, -social identity, and -place identity theory, also assume that *the many identities* (individually-, group-, and place-focused, respectively) *are considered*

important for any type of behaviour (individually-, group-, or place-focused PEB) *irrespective of whether the group/place with said identity is present* (Assumptions 2a–c; Table 1, Rows 7–9). Individually focused PEBs "[are] very largely determined by their individual characteristics and the nature of the person" (Tajfel, 1982, p. 13). Group-focused PEBs "[are] largely determined by group memberships of the participants and very little-if at all -by their personal relations or individual characteristics" (Tajfel, 1979, p. 401). Place-focused PEBs "[are] largely determined by [place] memberships of the participants and very little-if at all -by their personal relations, … individual characteristics, … [and group memberships of the participants]" (Tajfel, 1979, p. 401). We use these definitions from Tajfel that we acknowledge were not used, in any way, in relation to PEB. However, because of their generalizability, these definitions offer a suitable understanding of identity in a PEB context.

Empirical evidence has identified a wide range of individually-, group, place-focused identities related to different types of PEBs (Gatersleben et al., 2017; Murtagh et al., 2012). However, as different identities can relate to many different behaviours, there is confusion as to which identity does or does not associate with which PEBs. Indeed, our initial scan of the literature reveals that the different identities are not always associated with behaviour (Matsuba et al., 2012). Furthermore, as individuals can have plural identities that can relate to a variety of behaviours, there seems to be a trend towards assessing identity types in relation to many behaviours in any given study (Dunlap & McCright, 2008). However, the large number of identity–behaviour interactions studied, without an overview, makes it difficult to know which identities significantly relate to which behaviours. Hence, we aim to provide a comprehensive list of how each identity relates to different types of PEB with respect to significance (Aim 3).

Besides significance, some studies report positive associations (Terry, Hogg, & White, 1999; van der Werff, Steg, & Keizer, 2013), whereas other studies report negative associations (Cook, Kerr, & Moore, 2002; Murtagh et al., 2012). However, without an overview, it is difficult to know which identities positively or negatively associate with PEB. Knowing if identity increases/decreases behaviours will inform researchers as to which identities to utilise with which behaviours depending if they wish to increase/decrease the PEB. Therefore, we will also provide a comprehensive list of how each identity relates to each PEB with respect to direction (Aim 4).

Besides direction, some studies report a large effect (van der Werff, Steg, & Keizer, 2014b), medium effect (van der Werff et al., 2013; van der Werff et al., 2014b), or small effect (van der Werff, Steg, & Keizer, 2014a) between identity and behaviour. However, without an overview, it is difficult to know which identities relate to which PEBs either with a small, medium, or large effect. Providing an overview of which identity increases/decreases behaviours either with a small, medium, or large effect will inform researchers as to which identities to select to most effectively increase/decrease PEB. Taking all the above together, we have the remaining two related aims that will contribute to the literature, as we are able to conclude the extent to which we have evidence for second assumptions and by omission, we are able to identify what is less well evidenced. Therefore, future research can build on the existing knowledge and gaps. Furthermore, as we link each identity to PEBs type, we can conclude the extent to which PEB levels of identity (PEB-identity theory, PEB-social identity theory, and PEB-place identity theory) can explain their identity-PEB associations. Finally, like with other research (Hogg, Terry, & White, 1995), the continued critical comparison of the key theories and assumptions within a field, as well as testing and updating them, may help to improve our understanding of identity in PEB (Fritsche, Barth, Jugert, Masson, & Reese, 2017). Therefore, Aim 5 will be to provide a comprehensive list of how each identity relates to each PEB with respect to strength, and, Aim 6 will be to assess if the PEB is either an individual and/or group and/or place-focused PEB relating to an individually-, and/or group-, and/or place-focused identity.

1.8 | Systematic review

In the present paper, we aim to test the set of assumptions as proposed by our updated/integrated identity theory (PEB levels of identity, Table 1). Specifically, we test the possibility of multiple identities (Assumptions 1a–c; Table 1, Rows 4–6) relating to any PEB type (Assumptions 2a–c; Table 1, Rows 7–9), and then later in the discussion, we reveal how these identities can be made salient (Assumptions 3a–c; Table 1, Rows 10–12). Furthermore, we reveal that these identities are held in mind in a specific order, which we refer to as the hierarchy of salience (Assumptions 4a–c; Table 1, Rows 13–15). Finally, we reveal that consumers can have competing identities, meaning identities need to be similar and align with each other in order for behaviour to occur (Assumptions 5a–c; Table 1, Rows 16–18).

These assumptions are developed from understanding identity as a unique theoretical construct. We check each articles' method and results to assess if our assumptions can be confirmed, irrespective of the theory that the research in question used and assumed. It is important to take this lens because most prior research does not clearly use, or describe, identity theory assumptions (exception Murtagh et al., 2012). Therefore, the current state of the field is unclear of what we can assume about the concept of identity for understanding PEB. Furthermore, different assumptions, not directly related to identity theories, are used in many papers. That is, identity is often an "add on" construct to other theories that are not identity related (Murtagh et al., 2012). For example, a measure of identity is often an "add on" to the theory of planned behaviour (Fielding, McDonald, & Louis, 2008; Fielding, Terry, et al., 2008; Nigbur, Lyons, & Uzzell, 2010; Shaw, Shiu, & Clarke, 2000; Sparks & Shepherd, 1992; Terry et al., 1999; White, Smith, Terry, Greenslade, & McKimmie, 2009; Yazdanpanah & Forouzani, 2015). In our systematic review, we do not view identity as an add on but specifically zoom in on it.

Inspired by the notion of identity and social identity theory integration (Stets & Burke, 2000), we wondered if we could create a parsimonious theory of identity that included all three theories (identity theory, social identity theory, and place identity theory), assumptions

for understanding identity and PEB relationships. That is, how can we make the understanding and future testing of identity more consistent, comparable, and clear? Indeed, the present paper introduces such a theory (PEB levels of identity, Table 1), including assumptions to help researchers understand the use of identity and PEB relationships theoretically.

Our integrated theory of identity helps researchers to (a) understand the construct of identity in its own right, (b) provide clear patterns in research (e.g., by checking the five assumptions), and (c) compare identity-PEB studies with each other. Our theory suggests that identity in relation to PEB can be understood consistently. Hereby, our theory can help future research to consistently, comparably, and theoretically use identity. Furthermore, our assumptions and understanding of identity can be used as a benchmark and be updated depending on what new research reveals. Finally, our theoretical framework will enable researchers to understand how to effectively use identity to increase PEB as well as noticing what is still less well understood and missing. For example, our study reveals that any person can have multiple identities, yet this notion is less well understood and studied. This is important to address in future research, because this could be a key reason why people may not carry out PEBs.

As of yet, there is little descriptive clarity on how different identity types relate to various types of PEB. That is, theoretically and conceptually, the concept of identity is too scattered for a meta-analysis to be conducted; a systematic description of the field seems to be more appropriate where the literature stands. A systematic review allows us to provide such a systematic description (Moher, Liberati, Tetzlaff, Altman, The PRISMA Group, 2009). Therefore, we will conduct a systematic review to achieve more descriptive clarity. A systematic review will develop our scholarly understanding of how specific types of identities and behaviours can be classified (i.e., we found that it can be divided into three levels: individually-, group-, and/or place-focused), whether these three specific identities relate to specific PEBs (i.e., to individually-, group-, and/or place-focused PEBs), along with identifying the relationships between the three different identity types and the three PEB types. In other words, the present systematic review revealed the classification of identity types and PEBs, the gaps in the extent to which these relate to each other, and the importance of specific identity types for specific PEB types, as well as several surprising findings, such as inconsistencies within one and the same study, several methodological issues, and new ideas for future research. Therefore, we aim to provide a preliminary understanding and empirical evidence of the three new PEB levels of identity (i.e., PEB-identity theory, PEB-social identity theory, and PEB-place identity theory). We examine the five (implicit) assumptions in the current literature, systematically and coherently in one article, so that these three PEB levels of identity (our "new" theory) can be assessed.

Specifically, we provide a comprehensive list of each identity that is empirically tested in a PEB context (Aim 1). Also, for each of the three PEB levels of identity, we provide a comprehensive list of which theory links to which identity in question (Aim 2). Furthermore, we provide a comprehensive list of how each identity relates to each PEB with respect to significance, direction, and strength of these relationships (Aims 3–5). In addition, we assess if the PEB is either an individual and/or group and/or place-focused PEB relating to an individually-, group-, and/or place-focused identity (Aim 6). That is, we find holes, gaps, and inconsistencies in the use of identity for understanding PEB. Addressing these aims will help us to clarify how to use the construct of identity theoretically and methodologically in PEB research. Furthermore, by providing this descriptive overview of the literature, we observe if other hidden assumptions may emerge. That is, a systematic review enables us to unravel what types of PEBs and identities are generally investigated and what types of findings research evidences and enable us to map these findings onto our new set of assumptions for the first time, to align this research theoretically.

2 | METHOD

We used the PRISMA method (Moher, Liberati, Tetzlaff, Altman, The PRISMA Group, 2009). The method has been widely used for systematic reviews, especially in the medical sciences (Drubbel et al., 2014; Holden, Haywood, Potia, Gee, & McLean, 2014). PRISMA offers a concise and replicable standard for conducting and reporting systematic reviews by advocating several reproducible steps (Higgins & Green, editors, 2011). We outlined the steps below. Therefore, this review can be replicated and updated, which means our first contribution is by introducing these guidelines to this field which future research can utilise and build on.

2.1 | Protocol

A peer-reviewed protocol was necessary a priori to the systematic review. This protocol was preregistered on the Open Science Framework (osf.io/bk6xe).

2.2 | Eligibility criteria

To address the aims, we used three criteria for a study's inclusion. First, the studies needed to test both identity and PEB. The PEB could include self-reported intentions to engage in PEB, self-reported past PEB, or observable measures of PEB. Second, the studies needed to use a design that allowed for the effects between identity and behaviour to be measured, compared, and obtained. Consequently, we only included quantitative research. Third, we focused on primary studies that were published in peer-reviewed academic journals, excluding, for example, reviews, conference proceedings, books, unpublished dissertations, and working papers. We used this criterion to ensure quality and consistency between the studies in terms of methodology and data reporting (Field, 2005).

2.3 | Information sources

Electronic searches were conducted in four databases for academic journals, namely, Web of Science, Scopus (Elsevier), PsycArticles using PsycNet, and EBSCOhost Business Source Complete. In addition, we used two other sources to obtain potentially relevant articles that may have been missed via the electronic search process. First is Google Scholar Alert. Second is hand searching, which meant manually examining the contents of an article to identify additional eligible studies (Higgins & Green, 2011). Sources were searched between August 31, 2014 and February 26, 2015.

2.4 | Search strategy

Using a modified checklist from the Cochrane Collaboration of Systematic Reviews, search terms and keywords were identified (Open Science Framework, osf.io/bk6xe; and available on request). We chose these search terms to maximise the identification of relevant articles. Hence, we started with many search results, but only a small proportion of these were relevant for the final inclusion.

2.5 | Study selection process

In five steps, we identified the total number of relevant studies: 54 articles, comprising of 62 studies, ranging from 1992 to 2015.

1. The total number of records identified via electronic database searching was 5,681.
2. Additional records were identified via Google scholar alert (n = 1) and hand searching (n = 1; n_{total} = 5,683).
3. Duplicate records were identified (n = 122; n_{total} = 5,561).
4. We reviewed the titles and abstracts of the remaining records based on the three eligibility criteria. Two researchers independently assessed 90% of the records, whereby less than 100% of records being checked is acceptable (Liberati et al., 2009). The researchers disagreed about the inclusion of 16% of the records. Specifically, we calculated the Cohen's kappa, which was 0.88 (near perfect agreement: between 0.81 –0.99; Cohen, 1960).
5. Full text articles were reviewed based on the three eligibility criteria, and 50% went through the double-reviewing process, which is acceptable for reviews (Liberati et al., 2009). The researchers disagreed about the inclusion of articles (9%). After the final step, 300 articles were excluded, leaving a total number of 54 articles comprising of 62 studies.

2.6 | Data Extraction Process and Analytical Procedures

We extracted (when possible) information on identity types, PEB type, and the relationships between each identity and each PEB. For the latter, we extracted statistics, such as regression, beta, intercept, odds ratio, split sample multinomial probits, multinomial probits, and Cohen's *d*. Furthermore, we obtained whether the identity-behaviour associations were significant, positive/negative, the direction of the relationship, and the effect size (small/medium/large; Cohen, 1992). When effect sizes were not provided, we calculated them when possible (Pearson, 1895). Finally, we extracted the study design used. This extraction process was in line with other research and the recommendations by Cochrane Handbook for Systematic Reviews, upon which PRISMA is based (Bossuyt, Davenport, Deeks, Hyde, Leeflang, & Scholten, 2008). Fifty percent of all analyses went through the double-reviewing process. The two researchers agreed on the results of all analyses.

Finally, we systematically interpreted which identity type and which PEB type they were aligned to. Therefore, identities and PEBs were categorized as either individually-, group-, or place-focused identities in line with PEB-identity theory, -social identity theory, or –place identity theory, respectively.

3 | RESULTS

3.1 | Assumptions 1a–c: Any one person can have plural individually-, group-, place-focused identities (Aims 1 and 2)

In the 62 studies, 99 identities were studied in relation to PEB (Aim 1; Table 2). Of these 62 studies, 58% studied one identity, 20% two-, 10% three-, 2% four-, 5% five-, 3% seven-, and 2% studied eight identities. Thus, studies have reported a multitude of identities for understanding PEB. However, most research focused on the contribution of one identity in any given study. Furthermore, identities were categorized as either individually-focused, group-, or place-focused identities in line with PEB-identity theory, PEB-social identity theory, or PEB-place identity theory, respectively (Aim 2; Table 2). Individually focused identities were predominantly studied (n = 59) compared with group-focused identities (n = 34), or place-focused identities (n = 6). In addition, people can have multiple specific identities such as multiple individual (Kiesling & Manning, 2010; Matsuba et al., 2012; Murtagh et al., 2012), group (Bartels & Hoogendam, 2011; Murtagh et al., 2012) and place identities (Halpenny, 2010; Swim et al., 2014). However, few studies researched participants having a mix of individually- and group-focused identities (Costa-Pinto, Herter, Rossi, & Borges, 2014; Costa-Pinto, Nique, Herter, & Borges, 2016; Fielding et al. 2008; Murtagh et al., 2012; Nigbur et al., 2010; Terry et al., 1999) and a mix of individually- and place-focused identities (Swim, Zawadzki, Cundiff, & Lord, 2014; Tam, 2013). Finally, we did not find participants having a mix of group- and place-focused identities nor individually-, group-, and place-focused identities because we did not find these combinations studied. Therefore, a key conclusion of our work is that combinations of multiple identities are less well understood and need future exploration.

TABLE 2 Alphabetical list of identity (ID) with the congruent PEB levels of identity, namely, (1) PEB-ID theory, (2) PEB-social ID theory, or (3) PEB-place ID theory because these are congruent with how IDs are conceptualized

Identity (References)	1	2	3
1. Allo-inclusive ID: Inclusion of people, animals, & inanimate entities(Tam, **2013**)			X
2–3. Behaviour generic self-ID: Pro-environmental and carbon offsetting(Whitmarsh & O'Neill, 2010)	X		
4. Car-authority ID(**Schuitema, Anable, Skippon, & Kinnear,** 2013)	X		
5. Consumers identification with socially responsible insurance company(Pérez, 2009)		X	
6. Corporate social responsibility perceived ID(Pérez, 2009)		X	
7. Ecological self-ID(**Barata & Castro, 2013**; Castro, Garrido, Reis, & Menezes, 2009)	X		
8–12. Environmental gardening ID, and subcategories: connection to wild, natural function, pesticide avoidance, willingness to engage with natural processes(Kiesling & Manning, 2010)	X		
13. Environmental gardening ID: Worldview(Kiesling & Manning, 2010)	X		
14. Environmental ID(Brügger, Kaiser, & Roczen, 2011; Davis, Le, & Coy, 2011; **Hinds & Sparks, 2008**; **Kiesling & Manning, 2010**; Matsuba et al., 2012; **Tam, 2013**)	X		
15. Environmental ID: Identification with nature(Swim et al., 2014)			X
16–20. Environmental movement ID, and subcategories: active ID, neutral ID, sympathetic ID, unsympathetic ID(Dunlap & McCright, 2008)		X	
21. Environmental self-ID(**van der Werff et al., 2013**, **2014a**, **2014b**)	X		
22–24. Environmentalist ID, and subcategories: somewhat, strong(Owen et al., 2010)	X		
25. Environmentally conscious ID(Bhattacharjee, Berger, & Menon, 2014)	X		
26. Fair Trade consumer ID(Andorfer & Liebe, 2013)	X		
27. Green consumer ID(Bhattacharjee et al., 2014)	X		
28. Green self-ID(Whitmarsh & O'Neill, 2010)	X		
29–31. Group identification rural, and subcategories: High, low(Fielding et al., 2008)		X	
32. ID as environmentalists or not(Owen et al., 2010)	X		
33. ID maturity(Matsuba et al., 2012)	X		
34. ID similarity with typical recyclers(Mannetti et al., 2004)		X	
35–39. Identification with food, and sub-categories: Fruit, red meat, vegetables, white meat(Allen & Baines, 2002)	X		
40–42. In group ID green, and sub-categories: "Green" celebrity, "Regular" green consumer(Gupta & Ogden, 2009)		X	
43. National ID: Indonesian(Juneman & Rufaedah, 2013)		X	
44. Neighbourhood identification(Nigbur et al., 2010)		X	
45. Not environmentalist ID(Owen et al., 2010)	X		

(Continues)

TABLE 2 (Continued)

Identity (References)	1	2	3
46. Perceived self-ID as health-conscious & environmentally concerned(Bissonnette & Contento, 2001)	X		
47. Personal ID(**Costa-Pinto et al., 2014**; **Costa-Pinto et al., 2016**)	X		
48. Place attachment with Bronx New York City(Kudryavtsev et al., 2012)			X
49. Place ID of island high in environmental protection(Hernández et al., 2010)			X
50. Place ID with Dandenong Ranges National Park(Ramkissoon, Graham Smith, & Weiler, 2013)			X
51. Place ID with Harris Township an agricultural land(Swim et al., 2014)			X
52. Place ID-Affect to Point Pelee National Park(Halpenny, 2010)			X
53. Pro-environmental ID(**Schuitema et al., 2013**)	X		
54. Role ID: Gender ID(**Stets & Biga, 2003**)	X		
55. Self-ID(**Oh & Yoon, 2014**)	X		
56. Self-ID as a health-conscious consumer(Sparks & Shepherd, 1992)	X		
57. Self-ID as a recycler(Nigbur et al., 2010; White & Hyde, 2012)	X		
58. Self-ID in environmental protection(Lee, 2009)	X		
59. Self-ID in private nature conservation(Lokhorst et al., 2014)	X		
60. Self-ID with environmental activism(**Fielding et al., 2008**)	X		
61. Self-ID with ethical issues(Shaw et al., 2000; Shaw & Shiu, 2002)	X		
62. Self-ID with food produced using genetic engineering(Cook et al., 2002)	X		
63. Self-ID with green consumerism(Sparks & Shepherd, 1992)	X		
64. Self-ID with organic food(Yazdanpanah & Forouzani, 2015)	X		
65-68. Self-ID with organic food: Environment ID, and sub-categories: Commitment, prominence, salience(Stets & Biga, 2003)	X		
69. Self-ID: Household recycling(Terry et al., 1999)	X		
70-73. Self-identified: Ethnicity, and sub-categories: Anglo, Black, Hispanic(**Klineberg, McKeever, & Rothenbach,** 1998)	X		
74-77. Self-identified: Political ideology, and sub-categories: Conservative, Liberal, Moderate(Klineberg et al., 1998)	X		
78. Social ID(**Costa-Pinto et al., 2014**; **Costa-Pinto et al., 2016**; Steinheider & Hodapp, 1999)		X	
79–82. Social ID importance, and sub-categories: Member of local community, parent, worker(Murtagh et al., 2012)		X	
83. Social ID: Community ID(Nonami & Kato, 2009)		X	
		X	

(Continues)

TABLE 2 (Continued)

Identity (References)	1	2	3
84. Social ID: Dislike of group & no identification with (social) group of environmentalists(Dono, Webb, & Richardson, 2010)			
85. Social ID: Family(Steinheider & Hodapp, 1999)		X	
86. Social ID: Global identification(Reese & Kohlmann, 2015)		X	
87. Social ID: Group identification(Terry et al., 1999; White et al., 2009)		X	
88. Social ID: Group identification with (social) group of environmentalists(Dono et al., 2010)		X	
89. Social ID: Group identification with environmentalist(Dono et al., 2010)		X	
90. Social ID: Group membership of an environmental group(Fielding et al., 2008)		X	
91. Social ID: Sense of neighbourhood community(Rees & Bamberg, 2014)		X	
92. Social ID: Work(Steinheider & Hodapp, 1999)		X	
93–94. Social identification with environmentally conscious consumer(Bartels & Hoogendam, 2011) and organic consumer(Bartels & Hoogendam, 2011; Bartels & Onwezen, 2014)		X	
95–99. Transport related ID importance, and subcategories: Cyclist, motorist, pedestrian, public transport user(Murtagh et al., 2012)	X		

Note. References in **bold text** = Authors defined their chosen identity.
Abbreviations: ID, identity; PEB, pro-environmental behaviour.

Overall, this review found support for the first assumptions of PEB levels of identity (Table 1, Rows 4–6). However, this evidence was mostly for individually focused identities/PEB-identity theory. That is, theoretically, it is established that people can, for example, belong to different social groups and therefore have different group identities (Tajfel & Turner, 1979). However, as the review revealed, people's belongingness to different social groups at one time was rarely reported and studied. Therefore, our findings reveal that what we know about identity, theoretically, is not always mapped onto what we as scholars research and, subsequently, what we advise consumers and others to do in order to further understand and encourage PEB. This insight from our systematic review is important, because it shows that there is currently a "blind spot" in our research as a field, and by showing, this we can now take steps to remedy this in future research.

3.2 | Assumptions 2a–c: The many identities are considered important for any type of behaviour, individually-, group-, or place-focused PEB (Aims 3–6)

At the study level, and with regard to significance, 72% of the studies found associations between identity and PEB. Fewer, 53% did not find identity-PEB associations. Finally, 17% did not report all the identity-PEB associations (Aims 3–5; Table 3). On the identity level, of the 99 identity types, 66 were associated with PEB (positive and/or negative). On the PEB level, 316 PEBs/intentions were measured (Table 3, Column 6). Furthermore, 69 were intentions rather than behaviours (247 out of 316). Additionally, fewer identity–intention measures significantly associated (24 out of 69) compared with identity–behaviour measures (132 out of 247). Additionally, the associations varied and even within papers (van der Werff et al., 2013: Study 1 and 3). However, the significance level differences may be due to different sample sizes and variances in the separate samples. Furthermore, we propose that there was a behaviour—observed behaviour gap rather than just and intention-behaviour gap present. In addition, we found both supporting and non-supporting results in the same studies for the same identities relating to like-minded PEBs, such as for "behaviour generic self-identity: pro-environmental" (Whitmarsh & O'Neill, 2010), "environmental movement identity: sympathetic identity" (Dunlap & McCright, 2008), "environmental movement identity: unsympathetic identity" (Dunlap & McCright, 2008), and "Fair Trade consumer identity" (Andorfer & Liebe, 2013). Finally, reporting was not always fully transparent, and associations were not always reported. Therefore, we recommend what to report in future studies to be more transparent (see section "Methodological Contributions"). However, significant relationships were most frequently evidenced (Table 3, Column 8) and mostly correlational (Table 4).

TABLE 3 Alphabetical list of relationships of identity in prior PEB research

Identity (Reference. Study number)	ID Theme	Direct.	PEB Theme	PEB	Measure IN/BR	Effect size	Sig.	ID+PEB Type
Allo-inclusive identity: Inclusion of people, animals, & inanimate entities (Tam, 2013 Study 2)	PEB-related	←	PEB-related	**Environmental behaviour**	BR	*r* = .48; M	n.s.	P + I
Behaviour generic self-identity: Pro-environmental (Whitmarsh & O'Neill, 2010 Study 1)	PEB-related	→	PEB-related	Intent to use carbon offsetting	IN	*r*=.04;S	**	I + I
			PEB-related	All PEB	BR	*r* =.30; M	***	I + I&G
			PEB-related	Waste reduction	BR	*r* = .15; S	**	I + I
			PEB-related	Ecological shopping & eating	BR	*r* =.27; S	**	I + I
			PEB-related	Water & energy conservation	BR	*r* =.12; S	*	I + I
			PEB-related	One off energy conservation	BR	*r* = .06; S	n.s.	I + I
			PEB-related	Ecological driving	BR	*r* = –.06; S	n.s.	I + I
			PEB-related	Specific ecological behaviour: Political actions	BR	*r* =.08; S	n.s.	I + I
			PEB-related	Reduced car use & flights	BR	*r* =.004; S	n.s.	I + I
Behaviour specific self- identity: Carbon offsetting (Whitmarsh & O'Neill, 2010 Study 1)	PEB-related	→	PEB-related	Intent to use carbon offsetting	IN	R^2 = .46; L	***	I + I
Car-authority identity (Schuitema et al., 2013 Study 1)	Neutral to PEB related	→	PEB-related	Intent to adopt as main/second car plug-in hybrid/battery electric car	IN	x	x	I + I
Consumer's identification with socially responsible insurance company (Pérez, 2009 Study 1)	PEB-related	→	PEB-related	Intent to buy insurance from socially responsible company	IN	*r* = .04; S	n.s.	G + I
Corporate social responsibility perceived identity (Pérez, 2009 Study 1)	PEB-related	→	PEB-related	Intent to buy insurance from socially responsible company	IN	x	n.s.	G + I
Ecological self-identity (Barata & Castro, 2013 Study 1)	PEB-related	→	PEB-related	Recycling behaviour (Ecological self-identity[a]Subjective ambivalence)	BR	*r* = .23; S	**	I + I
			PEB-related			*r* =.03; S	n.s.	
			PEB-related			*r* = –.11; S	***	
Ecological self-identity (Castro et al., 2009 Study 1)	PEB-related	x	PEB-related	**Intent to start/continue separation/deposition of metal waste in low ambivalence group**	IN	*r* = .45; M	***	I + I
		→	PEB-related	Separate & deposit metal waste in designated street containers (in Low ambivalence group)	BR	*r* = .25; S	***	I + I
			PEB-related	Separate & deposit metal waste in designated street containers (in High ambivalence group)	BR	*r* = .27; S	***	I + I
Environmental gardening identity (Kiesling & Manning, 2010 Study 1).	PEB-related	→	PEB-related	Environmentally friendly gardening	BR	*r* = .45; M	***	I + I
Environmental gardening identity: Connection to wild (Kiesling & Manning, 2010 Study 1).	PEB-related	→	PEB-related	Environmentally friendly gardening	BR	*r* = .22; S	n.s.	I + I
Environmental gardening identity: Natural function (Kiesling & Manning, 2010 Study 1).	PEB-related	→	PEB-related	Environmentally friendly gardening	BR	*r* = .39; M	***	I + I

(Continues)

TABLE 3 (Continued)

Identity (Reference. Study number)	ID Theme	Direct.	PEB Theme	PEB	Measure IN/BR	Effect size	Sig.	ID+PEB Type
Environmental gardening identity: Pesticide avoidance (Kiesling & Manning, 2010 Study 1).	PEB-related	→	PEB-related	Environmentally friendly gardening	BR	*r* = .37; M	***	I + I
Environmental gardening identity: Willingness to engage with natural processes (Kiesling & Manning, 2010 Study 1).	PEB-related	→	PEB-related	Environmentally friendly gardening	BR	*r* = .31; M	***	I + I
Environmental gardening identity: Worldview (Kiesling & Manning, 2010 Study 1).	PEB-related	→	PEB-related	Environmentally friendly gardening	BR	*r* = .23; S	n.s.	I + I
Environmental identity (Brügger et al., 2011 Study 1)	PEB-related	→	PEB-related	Ecological behaviour	BR	*r* = .54; L	***	I + I
Environmental identity (Davis et al., 2011 Study 1)	PEB-related	→	PEB-related	General ecological behaviour	BR	*r* = .51; L	***	I + I
			PEB-related	Intent to sacrifice for environment	IN	*r* = .66; L	*	I + I
Environmental identity (Matsuba et al., 2012 Study 1)	PEB-related	→	PEB-related	Specific environmental actions	BR	*r* = .45; M	n.s.	I + I
			PEB-related	Non-public environmental behaviour	BR	*r* = .16; S	n.s.	I + I
			PEB-related	Public environmental behaviour	BR	*r* = .29; S	n.s.	I + G
			PEB-related	Environmental involvement	BR	*r* = .50; L	n.s.	I + I
Environmental identity (Hinds & Sparks, 2008 Study 1)	PEB-related	→	PEB-related	Intent to engage with natural environment	IN	*r* = .67; L	n.s.	I + I
Environmental identity (Kiesling & Manning, 2010 Study 1)	PEB-related	→	PEB-related	Environmentally friendly gardening	BR	*r* = .27; S	***	I + I
Environmental identity (Tam, 2013 Study 1)	PEB-related	←	PEB-related	**Frequency of environmental behaviour**	BR	*r* = .36; M	n.s.	I + I
Environmental identity (Tam, 2013 Study 2)	PEB-related	←	PEB-related	**Environmental behaviour**	BR	*r* = .66; L	*	I + I
Environmental identity: Identification with nature (Swim et al., 2014 Study 1)	PEB-related	→	PEB-related	Intent to pay for township open space	IN	*r* = .22; S	***	P + P
			PEB-related	Intent to increase amount pay for township open space	IN	*r* = .30; M	***	P + P
Environmental movement identity (Dunlap & McCright, 2008 Study 1).	PEB-related	→	PEB-related	PEB	BR	x	x	G + I
Environmental movement identity: Active identity (Dunlap & McCright, 2008 Study 1).	PEB-related	→	PEB-related	Member of national environmental organizations (%Yes)	BR	OR = 34.2; L	***	G+G
			PEB-related	Member of local environmental organizations (%Yes)	BR	OR = 5.9; L	***	G + G
			PEB-related	Member of either national/local environmental organizations (%Yes)	BR	OR = 8.7; L	***	G + G
			PEB-related	Past recycling (Yes/No)	BR	OR = 4.3; L	**	G + I
			PEB-related	Used less water (Yes/No)	BR	OR = 2.5; M	**	G + I
			PEB-related	Avoided environmentally harmful products (Yes/No)	BR	OR = 2.5; M	**	G + I
			PEB-related	Reduced energy use in past (Yes/No)	BR	OR = 3.0; M	***	G + I
			PEB-related	Bought environmentally friendly products (Yes/No)	BR	OR = 3.4; M	***	G + I
			PEB-related	Contributed money to environmental group (Yes/No)	BR	OR = 4.1; M	***	G + G

(Continues)

TABLE 3 (Continued)

Identity (Reference. Study number)	ID Theme	Direct.	PEB Theme	PEB	Measure IN/BR	Effect size	Sig.	ID+PEB Type
			PEB-related	Signed petition in past (Yes/No)	BR	OR = 3.1; M	***	G + I
			PEB-related	Voted for candidate because of environmental records (Yes/No)	BR	OR = 3.2; M	***	G + G
			PEB-related	Past PEB: Attended meeting (Yes/No)	BR	OR = 3.1; M	***	G + G
			PEB-related	Past PEB: Contacted official (Yes/No)	BR	OR = 4.3; L	***	G + G
			PEB-related	Past PEB: Been active in group (Yes/No)	BR	OR = 5.4; L	***	G + G
			PEB-related	Past PEB: Complained to business (Yes/No)	BR	OR = 3.6; M	***	G + I
Environmental movement identity: Neutral identity (Dunlap & McCright, 2008Study 1).	Neutral to PEB related	→	PEB-related	PEB	BR	x	x	G + I
Environmental movement identity: Sympathetic identity (Dunlap & McCright, 2008Study 1).	PEB-related	→	PEB-related	Member of national environmental organizations (%Yes)	BR	OR = 10.3; L	*	G + G
			PEB-related	Member of local environmental organizations (%Yes)	BR	OR = 2.0; S	n.s.	G + G
			PEB-related	Member of either national/local environmental organizations (%Yes)	BR	OR = 2.6; M	**	G + G
			PEB-related	Past recycling (Yes/No)	BR	OR = 1.6; S	n.s.	G + I
			PEB-related	Used less water (Yes/No)	BR	OR = 1.2; S	n.s.	G + I
			PEB-related	Avoided environmentally harmful products (Yes/No)	BR	OR = 2.0; S	***	G + I
			PEB-related	Reduced energy use in past (Yes/No)	BR	OR = 1.6; S	*	G + I
			PEB-related	Bought environmentally friendly products (Yes/No)	BR	OR = 2.6; M	***	G + I
			PEB-related	Contributed money to environmental group (Yes/No)	BR	OR = 1.9; S	***	G + G
			PEB-related	Signed petition in past (Yes/No)	BR	OR = 1.6; S	*	G + I
			PEB-related	Voted for candidate because of environmental records (Yes/No)	BR	OR = 1.8; S	**	G + G
			PEB-related	Past PEB: Attended meeting (Yes/No)	BR	OR = 1.5; S	n.s.	G + G
			PEB-related	Past PEB: Contacted official (Yes/No)	BR	OR = 2.1; S	++	G + G
			PEB-related	Past PEB: Been active in group (Yes/No)	BR	OR = 1.6; S	n.s.	G + G
			PEB-related	Past PEB: Complained to business (Yes/No)	BR	OR = 1.3; S	n.s.	G + I
Environmental movement identity: Unsympathetic identity (Dunlap & McCright, 2008Study 1).	Anti-PEB-related	→	PEB-related	Member of national environmental organizations (%Yes)	BR	OR = 4.5; L	n.s.	G + G
			PEB-related	Member of local environmental organizations (%Yes) (	BR	OR = 1.3; S	n.s.	G + G

(Continues)

TABLE 3 (Continued)

Identity (Reference. Study number)	ID Theme	Direct.	PEB Theme	PEB	Measure IN/BR	Effect size	Sig.	ID+PEB Type
			PEB-related	Member of either national/local environmental organizations (%Yes)	BR	OR = 1.4; S	n.s.	G + G
			PEB-related	Past recycling (Yes/No)	BR	OR = 1.0; S	n.s.	G + I
			PEB-related	Used less water (Yes/No)	BR	OR = .5; S	n.s.	G + I
			PEB-related	Avoided environmentally harmful products (Yes/No)	BR	OR = .4; S	—	G + I
			PEB-related	Reduced energy use in past (Yes/No)	BR	OR = .7; S	n.s.	G + I
			PEB-related	Bought environmentally friendly products (Yes/No)	BR	OR = .4; S	—	G + I
			PEB-related	Contributed money to environmental group (Yes/No)	BR	OR = .5; S	n.s.	G + G
			PEB-related	Signed petition in past (Yes/No)	BR	OR = .7; S	n.s.	G + I
			PEB-related	Voted for candidate because of environmental records (Yes/No)	BR	OR = .4; S	n.s.	G + G
			PEB-related	Past PEB: Attended meeting (Yes/No)	BR	OR = .9; S	n.s.	G + G
			PEB-related	Past PEB: Contacted official (Yes/No)	BR	OR = .8; S	n.s.	G + G
			PEB-related	Past PEB: Been active in group (Yes/No)	BR	OR = 1.7; S	n.s.	G + G
			PEB-related	Past PEB: Complained to business (Yes/No)	BR	OR = 1.4; S	n.s.	G + I
Environmental self-identity (van der Werff et al., 2013 Study 1)	PEB-related	→	PEB-related	Intent to use green energy in next year	IN	*r* = .47; M	***	I + I
Environmental self-identity (van der Werff et al., 2013 Study 2)	PEB-related	→	PEB-related	Counted number of times choice of a sustainable product	BR	*r* = .33; M	*	I + I
Environmental self-identity (van der Werff et al., 2013 Study 3)	PEB-related	→	PEB-related	Counted number of times choice of a sustainable product	BR	*r* = .34; M	n.s.	I + I
Environmental self-identity (van der Werff et al., 2014a Study 1)	PEB-related	→	PEB-related	Counted number of times choice of a sustainable product	BR	*r* = .23; S	***	I + I
Environmental self-identity (van der Werff et al., 2014a Study 2)	PEB-related	→	PEB-related	Counted number of times choice of a sustainable product	BR	*r* = .24; S	***	I + I
Environmental self-identity (van der Werff et al., 2014b Study 1)	PEB-related	x	PEB-related	**Driving in fuel-efficient way: 2010**	BR	*r* = .38; M	***	I + I
		→	PEB-related	Intent to reduce meat consumption: 2011	IN	*r* = .44; M	***	I + I
Environmental self-identity (van der Werff et al., 2014b Study 3)	PEB-related	→	PEB-related	Counted number of times choice of an environmentally friendly product	BR	R^2 = .29; L	***	I + I
Environmentalist identity (Owen et al., 2010 Study 1)	PEB-related	←	PEB-related	**PEB**	BR	x	x	I + I
Environmentalist identity: Somewhat (Owen et al., 2010 Study 1).	PEB-related	←	PEB-related	**PEB**	BR	x	x	I + I
Environmentalist identity: Strong (Owen et al., 2010 Study 1).	PEB-related	←	PEB-related	**PEB (in Republicans)**	BR	SSMP = .14	***	I + I
			PEB-related	**PEB (in Democrats)**	BR	SSMP = .27	***	I + I

(Continues)

TABLE 3 (Continued)

Identity (Reference. Study number)	ID Theme	Direct.	PEB Theme	PEB	Measure IN/BR	Effect size	Sig.	ID+PEB Type
Environmentally conscious identity (Bhattacharjee et al., 2014 Study 2)	PEB-related	→	PEB-related	Intent to purchase environmentally friendly product (in identity referencing message type group vs. Non-identity message type group)	IN	*d* = .66; M	***	I + I
			PEB-related	Intent to purchase environmentally friendly product (in identity defining message type group vs. Non-identity message type group)	IN	*d* = .53; M	***	I + I
Fair Trade consumer identity (Andorfer & Liebe, 2013 Study 1)	PEB-related	→	PEB-related	Frequency of purchasing Fair Trade coffee (in German participants)	BR	*r* = .81; L	***	I + I
			PEB-related	Frequency of purchasing Fair Trade coffee (U.S.A. participants)	BR	*r* = .78; L	***	I + I
			PEB-related	Fair Trade coffee choice (in German participants)	BR	*r* = .72; L	***	I + I
			PEB-related	Fair Trade coffee choice (U.S.A. participants)	BR	*r* = .37; M	n.s.	I + I
Green consumer identity (Bhattacharjee et al., 2014 Study 5)	PEB-related	→	PEB-related	Intent to purchase sustainable sweatshirt	IN	x	x	I + I
Green self-identity (Whitmarsh & O'Neill, 2010 Study 1)	PEB-related	→	PEB-related	PEB	BR	x	x	I + I
Group identification rural (Fielding, Terry, et al., 2008 Study 1)	PEB-related	x	PEB-related	**Time 1: Past sustainable agricultural practice**	BR	*r* = .17; S	**	G + I
		→	PEB-related	Intent for sustainable agricultural practice	IN	*r* = −.12; S	*	G + P
			PEB-related	Time 2: Sustainable agricultural practice	BR	*r* = −.03; S	n.s.	G + P
Group identification rural: High (Fielding, Terry, et al., 2008 Study 1)	PEB-related	→	PEB-related	Sustainable agricultural practice	BR	x	x	G + P
Group identification rural: Low (Fielding, Terry, et al., 2008 Study 1)	Anti-PEB-related	→	PEB-related	Sustainable agricultural practice	BR	x	x	G + P
Group identification rural (Fielding, Terry, et al., 2008 Study 2)	PEB-related	x	PEB-related	**Time 1: Past sustainable agricultural practice**	BR	*r* = .05; S	n.s.	G + P
		→	PEB-related	Intent for sustainable agricultural practice	IN	*r* = −.04; S	n.s.	G + P
			PEB-related	Time 2: Sustainable agricultural practice	BR	*r* = −.05; S	n.s.	G + P
Group identification rural: High (Fielding, Terry, et al., 2008 Study 2)	PEB-related	x	PEB-related	Sustainable agricultural practice	BR	x	x	G + P
Group identification rural: Low (Fielding, Terry, et al., 2008 Study 2)	Anti-PEB-related	x	PEB-related	Sustainable agricultural practice	BR	x	x	G + P
Identification with food (Allen & Baines, 2002 Study 1)	Neutral to PEB related	x	***Anti- and PEB-related***	Meat, fruit & vegetable consumption	BR	x	x	I + I
Identification with food: Fruit (Allen & Baines, 2002 Study 1)	PEB-related	x	***Anti- and PEB-related***	Meat, fruit & vegetable consumption	BR	x	x	I + I
Identification with food: Red meat (Allen & Baines, 2002 Study 1)	Anti-PEB-related	x	**Anti-PEB-related**	Intent to red meat intake	IN	x	n.s.	I + I
			Anti-PEB-related	Intent to white meat intake	IN	x	n.s.	I + I
			PEB-related	Intent to fruit intake	IN	x	**	I + I
			PEB-related	Intent to vegetables intake	IN	x	**	I+I

(Continues)

TABLE 3 (Continued)

Identity (Reference. Study number)	ID Theme	Direct.	PEB Theme	PEB	Measure IN/BR	Effect size	Sig.	ID+PEB Type
			Anti-PEB-related	3 weeks later: Red meat intake	BR	x	n.s.	I + I
			Anti-PEB-related	3 weeks later: White meat intake	BR	x	n.s.	I + I
			PEB-related	3 weeks later: Fruit intake	BR	x	**	I + I
			PEB-related	3 weeks later: Vegetables intake	BR	x	**	I + I
Identification with food: Vegetables (Allen & Baines, 2002Study 1)	PEB-related	x	***Anti- and PEB-related***	Meat, fruit & vegetable consumption	BR	x	x	I + I
Identification with food: White meat (Allen & Baines, 2002Study 1)	Anti-PEB-related	x	**Anti-PEB-related**	Intent to red meat intake	IN	x	n.s.	I + I
			Anti-PEB-related	Intent to white meat intake	IN	x	n.s.	I + I
			PEB-related	Intent to fruit intake	IN	x	**	I + I
			PEB-related	Intent to vegetables intake	IN	x	**	I + I
			Anti-PEB-related	3 weeks later: Red meat intake	BR	x	n.s.	I + I
			Anti-PEB-related	3 weeks later: White meat intake	BR	x	n.s.	I + I
			PEB-related	3 weeks later: Fruit intake	BR	x	**	I + I
			PEB-related	3 weeks later: Vegetables intake	BR	x	**	I + I
Identity as environmentalists or not (Owen et al., 2010Study 1)	Anti- and PEB-related	←	PEB-related	**PEB**	BR	x	x	I + I
Identity maturity (Matsuba et al., 2012Study 1)	Neutral to PEB related	→	PEB-related	Specific environmental actions	BR	*r* = .16; S	n.s.	I + I
			PEB-related	Non-public environmental behaviour	BR	*r* = .11; S	n.s.	I + I
			PEB-related	Public environmental behaviour	BR	*r* = .29; S	n.s.	I + G
			PEB-related	Environmental involvement	BR	*r* = .19; S	n.s.	I + I
Identity similarity with typical recyclers (Mannetti et al., 2004Study 1)	PEB-related	→	PEB-related	Intent to recycle	IN	*r* = .41; M	***	G + I
In group identity green (Gupta & Ogden, 2009Study 1)	PEB-related	→	PEB-related	Likelihood of green buyer (1) vs. non-green buyer (0)	BR	x	x	G + I
In group identity green: "Green" celebrity (Gupta & Ogden, 2009Study 1)	PEB-related	→	PEB-related	Likelihood of green buyer (1) vs. non-green buyer (0)	BR	x	***	G + I
In group identity green: "Regular" green consumer (Gupta & Ogden, 2009Study 1)	PEB-related	→	PEB-related	Likelihood of green buyer (1) vs. non-green buyer (0)	BR	x	***	G + I
National identity: Indonesian (Juneman & Rufaedah, 2013Study 1)	Neutral to PEB related	x	PEB-related	General PEB	BR	*r* = −.07; S	n.s.	G + I&G
Neighbourhood identification (Nigbur et al., 2010Study 1)	Neutral to PEB related	→	PEB-related	Intent to recycle	IN	*r* = .28; S	n.s.	G + I
			PEB-related	*Observed curb side recycling (green box set-out as a binary measure: set out/not set out)*	*BR*	OR = 1.08; S	n.s.	G + I
Neighbourhood identification (Nigbur et al., 2010Study 2)	Neutral to PEB related	→	PEB-related	Intent to recycle	IN	*r* = .19; S	n.s.	G + I
			PEB-related	Recycling behaviour	BR	*r* = .11; S	n.s.	G + I

(Continues)

TABLE 3 (Continued)

Identity (Reference. Study number)	ID Theme	Direct.	PEB Theme	PEB	Measure IN/BR	Effect size	Sig.	ID+PEB Type
Not environmentalist identity (Owen et al., 2010 Study 1)	Neutral to PEB related	←	PEB-related	**PEB**	BR	MP: –.17	***	I + I
			PEB-related	**PEB (in Republicans)**	BR	SSMP = –.18	***	I + I
			PEB-related	**PEB (in Democrats)**	BR	SSMP = –.17	***	I + I
Perceived self-identity as health-conscious & environmentally concerned (Bissonnette & Contento, 2001 Study 1)	PEB-related	→	PEB-related	Intent for food organically produced	IN	r = .30; M	***	I + I
			PEB-related	Intent for food grown locally	IN	R^2 = .09; M	***	I + I
			PEB-related	Purchase of food organically produced	BR	r = .30; M	n.s.	I + I
			PEB-related	Purchase of food grown locally	BR	R^2 = .21; L	n.s.	I + I
Personal identity (Costa-Pinto et al., 2014 Study 1)	Neutral to PEB related	→	PEB-related	Green products preferences: Non-vs. Transcendent values group	BR	x	***	I + I
Personal identity (Costa-Pinto et al., 2016 Study 1)	Neutral to PEB related	→	PEB-related	Sustainable consumption (Females vs. Males)	BR	x	***	I + I
			PEB-related	Sustainable consumption (Personal identity vs. Social identity group)	BR	x	n.s.	I + I
Place attachment with Bronx New York City (Kudryavtsev et al., 2012 Study 1)	Neutral to PEB related	←	PEB-related	***Observed environmental behaviour***	*BR*	x	x	P + I
Place identity of island high in environmental protection (Hernández et al., 2010 Study 1)	PEB-related	→	**Anti-PEB-related**	Likelihood of illegal behaviour	BR	r = –.01; S	n.s.	P + I
			Anti-PEB-related	Intent of: doing unauthorized camping on a beach	IN	x	n.s.	P + P
			Anti-PEB-related	… pouring sewage into sea	IN	x	n.s.	P + P
			Anti-PEB-related	… building a dwelling on land designated for agricultural use	IN	x	n.s.	P + P
			Anti-PEB-related	… turning music up so loud that it annoys neighbours (anti-environmental behaviour)	IN	x	n.s.	P + I
			Anti-PEB-related	… disposing rubble and used electrical appliances on land	IN	x	n.s.	P + P
			Anti-PEB-related	… abandoning pets and constructing/refurbishing a dwelling without permit	IN	x	n.s.	P + P
Place identity with Dandenong Ranges National Park (Ramkissoon et al., 2013 Study 1)	PEB-related	→	PEB-related	Intent of low effort PEB	IN	x	n.s.	P + I
			PEB-related	Intent of high effort PEB intent	IN	x	n.s.	P + I
Place identity with Harris Township an agricultural land (Swim et al., 2014 Study 1)	PEB-related	→	PEB-related	Intent to pay for township open space	IN	r = .22; S	*	P + P
			PEB-related	Intent to increase amount pay for township open space	IN	r = .23; S	***	P + P
Place identity-Affect to Point Pelee National Park (Halpenny, 2010 Study 1)	PEB-related	→	PEB-related	Intent for Point Pelee National Park specific PEB	IN	r = .28; S	***	P + P
			PEB-related	Intent for general PEB	IN	r = .43; M	***	P + I
Pro-environmental identity (Schuitema et al., 2013 Study 1)	PEB-related	→	PEB-related	Intent to adopt plug-in hybrid/battery electric car as main/second car	IN	x	x	I + I
Role identity: Gender identity (Stets & Biga, 2003 Study 1)	Neutral to PEB related	x	PEB-related	Environmental behaviour	BR	r = .06; S	n.s.	I + I&G

(Continues)

TABLE 3 (Continued)

Identity (Reference. Study number)	ID Theme	Direct.	PEB Theme	PEB	Measure IN/BR	Effect size	Sig.	ID+PEB Type
Self-identified: Ethnicity (Klineberg et al., 1998Study 1)	Neutral to PEB related	→	PEB-related	All PEB	BR	x	x	I + I&G
Self-identified: Ethnicity: Anglo (Klineberg et al., 1998Study 1)	Neutral to PEB related	→	PEB-related	All PEB	BR	x	x	I + I&G
Self-identified: Ethnicity: Black (Klineberg et al., 1998Study 1)	Neutral to PEB related	→	PEB-related	All PEB	BR	*r* = –.04; S	n.s.	I + I&G
			PEB-related	Gave time/money to environmental group	BR	*r* = –.07; S	n.s.	I + G
			PEB-related	Avoided damaging products	BR	*r* = –.27; S	n.s.	I + I
			PEB-related	Recycled cans, bottles, newspapers	BR	*r* = –.07; S	n.s.	I + I
Self-identified: Ethnicity: Hispanic (Klineberg et al., 1998Study 1)	Neutral to PEB related	→	PEB-related	All PEB	BR	*r* = –.001; S	n.s.	I + I&G
			PEB-related	Gave time/money to environmental group	BR	*r* = .27; S	+	I + G
			PEB-related	Avoided damaging products	BR	*r* = –18; S	n.s.	I + I
			PEB-related	Recycled cans, bottles, newspapers	BR	*r* = +.05; S	n.s.	I + I
Self-identified: Political ideology (Klineberg et al., 1998Study 1)	Neutral to PEB related	→	PEB-related	All PEB	BR	x	x	I + I&G
Self-identified: Political ideology: Conservative (Klineberg et al., 1998Study 1)	Neutral to PEB related	→	PEB-related	All PEB	BR	x	x	I + I&G
Self-identified: Political ideology: Liberal (Klineberg et al., 1998Study 1)	Neutral to PEB related	→	PEB-related	All PEB	BR	*r* = .09; S	*	I + I&G
			PEB-related	Gave time/money to environmental group	BR	*r* = .34; M	**	I+G
			PEB-related	Avoided damaging products	BR	*r* = .25; S	*	I + I
			PEB-related	Recycled cans, bottles, newspapers	BR	*r* = .02; S	n.s.	I + I
Self-identified: Political ideology: Moderate (Klineberg et al., 1998Study 1)	Neutral to PEB related	→	PEB-related	All PEB	BR	*r* = .02; S	n.s.	I + I&G
			PEB-related	Gave time/money to environmental group	BR	*r* = .10; S	n.s.	I + G
			PEB-related	Avoided damaging products	BR	*r* = .09; S	n.s.	I + I
			PEB-related	Recycled cans, bottles, newspapers	BR	*r* = –.03; S	n.s.	I + I
Self-identity (Oh & Yoon, 2014Study 1)	Neutral to PEB related	→	PEB-related	Intent for ethical consumption (such as considering environment)	IN	*r* = .30; M	n.s.	I + I
Self-identity as a health-conscious consumer (Sparks & Shepherd, 1992Study 1)	PEB-related	→	PEB-related	Intent to eat organic vegetables: in next week	IN	*r* =.01; S	n.s.	I + I
			PEB-related	… tomorrow	IN	x	n.s.	I + I
Self-identity as a recycler (White & Hyde, 2012Study 1)	PEB-related	→	PEB-related	Intent to recycle in next fortnight: Wave 1	IN	*r* = .68; L	***	I + I
		x	PEB-related	**Wave 1: Past fortnight recycling behaviour**	BR	*r* = .66; L	**	I + I
		→	PEB-related	Wave 2 (2 weeks later): Self-reported curb side recycling	BR	*r* = .55; L	n.s.	I + I
Self-identity as a recycler (Nigbur et al., 2010Study 1)	PEB-related	→	PEB-related	Intent to recycle	IN	*r* = .68; L	***	I + I

(Continues)

TABLE 3 (Continued)

Identity (Reference. Study number)	ID Theme	Direct.	PEB Theme	PEB	Measure IN/BR	Effect size	Sig.	ID+PEB Type
			PEB-related	*Observed curb side recycling (green box set-out as a binary measure: set out/not set out)*	*BR*	OR = 1.65; S	*	I + I
Self-identity as a recycler (Nigbur et al., 2010Study 2)	PEB-related	→	PEB-related	Intent to recycle	IN	*r* = .59; L	***	I + I
			PEB-related	Recycling behaviour	BR	*r* = .37; M	*	I + I
Self-identity in environmental protection (Lee, 2009Study 1)	PEB-related	→	PEB-related	Green purchasing behaviour (in Female participants)	BR	*r* = .32; *M*	***	I + I
			PEB-related	Green purchasing behaviour (in Male participants)	BR	*r* = .16; *S*	***	I + I
Self-identity in private nature conservation (Lokhorst et al., 2014Study 1)	PEB-related	→	PEB-related	Intent to do private nature conservation	IN	*r* = .79; L	***	I + I
Self-identity with environmental activism (Fielding, McDonald, & Louis, 2008Study 1)	PEB-related	→	PEB-related	Intent to do environmental activism in next 6 months	IN	*r* = .86; L	***	I + G
Self-identity with ethical issues (Shaw & Shiu, 2002Study 1)	PEB-related	→	PEB-related	Intent to buy Fair Trade groceries	IN	x	n.s.	I + I
Self-identity with ethical issues (Shaw et al., 2000Study 1)	PEB-related	→	PEB-related	Intent to buy Fair Trade groceries	IN	*r* = .25; S	**	I + I
Self-identity with food produced using genetic engineering (Cook et al., 2002Study 1)	Anti-PEB-related	→	**Anti-PEB-related**	Intent to purchase genetically engineered food	IN	*r* = .44; M	***	I + I
		x	**Anti-PEB-related**	**Prior frequency of purchase of food based on beliefs about pesticides use (never to always)**	BR	*r* = –.42; M	***	I + I
		x	**Anti-PEB-related**	**Prior frequency of food purchase based on additive content (never to always)**	BR	*r* = –.45; M	***	I + I
Self-identity with green consumerism (Sparks & Shepherd, 1992Study 1)	PEB-related	→	PEB-related	Intent to eat organic vegetables in next week	IN	*r* = .37; M	**	I + I
			PEB-related	Intent to eat organic vegetables tomorrow	IN	*r* = .42 to.45; M	**	I + I
Self-identity with organic food (Yazdanpanah & Forouzani, 2015Study 1)	PEB-related	→	PEB-related	Intent to buy organic food	IN	*r* = .36; M	**	I + I
Self-identity: Environment identity (Stets & Biga, 2003Study 1)	PEB-related	→	PEB-related	Environmental behaviour	BR	*r* = .59; L	*	I + I&G
Self-identity: Environment identity: Commitment (Stets & Biga, 2003Study 1)	PEB-related	→	PEB-related	Environmental behaviour	BR	*r* = .50; L	*	I + I&G
Self-identity: Environment identity: Prominence (Stets & Biga, 2003Study 1)	PEB-related	→	PEB-related	Environmental behaviour	BR	*r* = .52; L	*	I + I&G
Self-identity: Environment identity: Salience (Stets & Biga, 2003Study 1)	PEB-related	→	PEB-related	Environmental behaviour	BR	*r* = .33; M	n.s.	I + I&G
Self-identity: Household recycling (Terry et al., 1999Study 1)	PEB-related	→	PEB-related	Intent to recycle in next fortnight: Time 1	IN	*r* = .72; L	+	I + I
			PEB-related	Time 2 (2 weeks later): Past fortnight recycling	BR	*r* = .51; L	n.s.	I + I
		x	PEB-related	Time 1: Past behaviour	BR	*r* = .47; M	**	I + I
Social identification with environmentally conscious consumer (Bartels & Hoogendam, 2011Study 1)	PEB-related	→	PEB-related	Organic food purchase behaviour	BR	*r* = .45; M	n.s.	G + I

(Continues)

TABLE 3 (Continued)

Identity (Reference. Study number)	ID Theme	Direct.	PEB Theme	PEB	Measure IN/BR	Effect size	Sig.	ID+PEB Type
Social identification with organic consumer (Bartels & Hoogendam, 2011 Study 1)	PEB-related	→	PEB-related	Organic food purchase behaviour	BR	*r* = .69; L	**	G + I
Social identification with organic consumer (Bartels & Onwezen, 2014 Study 1)	PEB-related	→	PEB-related	Intent to buy: environmental claiming products	IN	*r* = .39; M	**	G + I
			PEB-related	… ethical claiming products	IN	*r* = .41; M	**	G + I
Social identity (Costa-Pinto et al., 2014 Study 1)	Neutral to PEB related	→	PEB-related	Green products preferences (Non-vs. Transcendent values group	BR	x	n.s.	G + I
Social identity (Steinheider & Hodapp, 1999 Study 1)	Neutral to PEB related	→	PEB-related	Ecological behaviour in area of work/family	BR	x	x	G + I&G
Social identity (Costa-Pinto et al., 2016 Study 1)	Neutral to PEB related	→	PEB-related	Sustainable consumption (Females vs. Males)	BR	x	n.s.	G + I
			PEB-related	Sustainable consumption (Personal identity vs. Social identity group)	BR	x	n.s.	G + I
Social identity importance: Member of local community (Murtagh et al., 2012 Study 1)	Neutral to PEB related	→	**Anti-PEB-related**	Number of journeys using car: Work	BR	*r* =.04; S	n.s.	G + I
			Anti-PEB-related	… School	BR	*r* =.03; S	n.s.	G + I
			Anti-PEB-related	… Other	BR	*r* = −.001; S	n.s.	G + I
			PEB-related	Number of journeys using public transport: Work	BR	*r* = −.16; S	n.s.	G + I
			PEB-related	… School	BR	*r* = −.12; S	n.s.	G + I
			PEB-related	… Other	BR	*r* = .00; S	n.s.	G + I
			PEB-related	Number of journeys by walking: Work	BR	*r* = −.05; S	n.s.	G + I
			PEB-related	… School	BR	*r* = −.01; S	n.s.	G + I
			PEB-related	… Other	BR	*r* = .01; S	n.s.	G + I
Social identity importance: Parent (Murtagh et al., 2012 Study 1)	Neutral to PEB related	→	**Anti-PEB-related**	Number of journeys using car: Work	BR	*r* = −.03; S	n.s.	G + I
			Anti-PEB-related	… School	BR	*r* = −.04; S	n.s.	G + I
			Anti-PEB-related	… Other	BR	*r* = .02; S	n.s.	G + I
			PEB-related	Number of journeys using public transport: Work	BR	*r* = .04; S	n.s.	G + I
			PEB-related	… School	BR	*r* = −.02; S	n.s.	G + I
			PEB-related	… Other	BR	*r* =.006; S	n.s.	G + I
			PEB-related	Number of journeys by walking: Work	BR	*r* = .04; S	n.s.	G + I
			PEB-related	… School	BR	*r* =.07; S	n.s.	G + I
			PEB-related	… Other	BR	*r* = −.04; S	n.s.	G + I
Social identity importance: Worker (Murtagh et al., 2012 Study 1)	Neutral to PEB related	→	**Anti-PEB-related**	Number of journeys using car: Work	BR	*r* =.02; *S*	n.s.	G + I
			Anti-PEB-related	… School	BR	*r* =.05; *S*	n.s.	G + I
			Anti-PEB-related	… Other	BR	*r* =.01; *S*	n.s.	G + I
			PEB-related	Number of journeys using public transport: Work	BR	*r* = −.06; *S*	n.s.	G + I
			PEB-related	… School	BR	*r* =.03; *S*	n.s.	G + I

(Continues)

TABLE 3 (Continued)

Identity (Reference. Study number)	ID Theme	Direct.	PEB Theme	PEB	Measure IN/BR	Effect size	Sig.	ID+PEB Type
			PEB-related	… Other	BR	*r* = –.16; *S*	n.s.	G + I
			PEB-related	Number of journeys by walking: Work	BR	*r* = –.24; *S*	n.s.	G + I
			PEB-related	… School	BR	*r* = –.07; *S*	*	G + I
			PEB-related	… Other	BR	*r* = –.09; *S*	n.s.	G + I
Social identity: Community identity (Nonami & Kato, 2009Study 1)	Neutral to PEB related	→	PEB-related	Intent to be personal/group environmentally-conscious	IN	x	x	G + I&G
Social identity: Dislike of group & no identification with (social) group of environmentalists (Dono et al., 2010Study 1)	Anti-PEB-related	→	PEB-related	PEB	BR	x	x	G + I&G
Social identity: Family (Steinheider & Hodapp, 1999Study 1)	Neutral to PEB related	→	PEB-related	Ecological behaviour in area of family	BR	*r* = –.13; S	n.s.	G + I&G
Social identity: Global identification (Reese & Kohlmann, 2015Study 1)	Neutral to PEB related	→	PEB-related	Intent to act against global inequality	IN	*r* = .58; L	*	G + I
			PEB-related	*Observed chocolate choice: Likelihood of choosing a Fair-Trade (+1) vs. Conventional chocolate (-1)*	*BR*	*r* = .25; S	n.s.	G + I
Social identity: Group identification (Terry et al., 1999Study 1)	Neutral to PEB related	→	PEB-related	Intent to recycle in next fortnight: Time 1 (Social identity[a]Group norm)	IN	*r* =.24; *S*	**	G+I
			PEB-related	Intent to recycle in next fortnight: Time 1 (Social identity[a]perceived behavioural control)	IN	*r* = –.39; *M*	**	G+I
			PEB-related	Intent to recycle in next fortnight: Time 1:	IN	*r* = .01; S	n.s.	G+I
			PEB-related	Time 2 (2 weeks later): Past fortnight recycling	BR	*r* = .07; S	n.s.	G+I
		x	PEB-related	Time 1: Past behaviour	BR	*r* = –.05; S	n.s.	G+I
Social identity: Group identification (White et al., 2009Study 2)	Neutral to PEB related	→	PEB-related	Intent to recycle (Social identity[a]Group norm)	IN	*r* = .77; L	***	G+I
			PEB-related	Intent to recycle	IN	*r* = .06	n.s	G+I
Social identity: Group identification with environmentalist (Dono et al., 2010. Study 1)	PEB-related	→	PEB-related	Past environmental activism	BR	*r* = .60; L	n.s.	G+G
			PEB-related	Pro-environmental consumer behaviour	BR	*r* = .42; M	+	G+I
			PEB-related	Willingness to sacrifice for the environment	BR	*r* = .57; L	*	G + I
			PEB-related	Environmental citizenship	BR	*r* = .75; L	*	G + G
Social identity: Group identification with (social) group of environmentalists (Dono et al., 2010Study 1)	PEB-related	→	PEB-related	PEB	BR	x	x	G + I&G
Social identity: Group membership of an environmental group (Fielding, McDonald, & Louis, 2008Study 1)	PEB-related	→	PEB-related	Intent to do environmental activism in next 6 months	IN	*r* = .68; L	***	G + G
Social identity: Sense of neighbourhood community (Rees & Bamberg, 2014Study 1)	Neutral to PEB related	→	PEB-related	Intent to do collective climate action	IN	*r* = .15; S	**	G + G
			PEB-related	Personal ecological behaviour	BR	*r* = .06; S	n.s.	G + I

(Continues)

TABLE 3 (Continued)

Identity (Reference. Study number)	ID Theme	Direct.	PEB Theme	PEB	Measure IN/BR	Effect size	Sig.	ID+PEB Type
Social identity: Work (Steinheider & Hodapp, 1999Study 1)	Neutral to PEB related	→	PEB-related	Ecological behaviour in area of work	BR	*r* = .02; S	n.s.	G + I&G
Transport related identity importance: Cyclist (Murtagh et al., 2012Study 1)	PEB-related	→	**Anti-PEB-related**	Number of journeys using car: Work	BR	*r* =.02; S	n.s.	I + I
			Anti-PEB-related	… School	BR	*r* = –.04; S	n.s.	I + I
			Anti-PEB-related	… Other	BR	*r* =.04; S	n.s.	I + I
			PEB-related	Number of journeys using public transport: Work	BR	*r* = –.19; *S*	*	I + I
			PEB-related	… School	BR	*r* =–.08; *S*	n.s.	I + I
			PEB-related	… Other	BR	*r* = –.04; *S*	n.s.	I + I
			PEB-related	Number of journeys by walking: Work	BR	*r* =.02; S	n.s.	I + I
			PEB-related	… School	BR	*r* =.04; S	n.s.	I + I
			PEB-related	… Other	BR	*r* = .03; S	n.s.	I + I
Transport related identity importance: Motorist (Murtagh et al., 2012Study 1)	Anti-PEB-related	→	**Anti-PEB-related**	Number of journeys using car: Work	BR	*r* = .07; S	*	I + I
			Anti-PEB-related	… School	BR	*r* = –.01; S	n.s.	I + I
			Anti-PEB-related	… Other	BR	*r* = .04; S	*	I + I
			PEB-related	Number of journeys using public transport: Work	BR	*r* = –.18; S	*	I + I
			PEB-related	… School	BR	*r* = .09; S	n.s.	I + I
			PEB-related	… Other	BR	*r* =.05; S	n.s.	I + I
			PEB-related	Number of journeys by walking: Work	BR	*r* =.01; S	n.s.	I + I
			PEB-related	… School	BR	*r* = –.01; S	n.s.	I + I
			PEB-related	… Other	BR	*r* = –14; S	**	I + I
Transport related identity importance: Pedestrian (Murtagh et al., 2012Study 1)	PEB-related	→	**Anti-PEB-related**	Number of journeys using car: Work	BR	*r* = –.06; S	n.s.	I + I
			Anti-PEB-related	… School	BR	*r* = –.03; S	n.s.	I + I
			Anti-PEB-related	… Other	BR	*r* = .01; S	n.s.	I + I
			PEB-related	Number of journeys using public transport: Work	BR	*r* = –.08; S	n.s.	I + I
			PEB-related	… School	BR	*r* = –.43; M	n.s.	I + I
			PEB-related	… Other	BR	*r* =.58; L	n.s.	I + I
			PEB-related	Number of journeys by walking: Work	BR	*r* = .06; S	**	I + I
			PEB-related	… School	BR	*r* =.08; S	n.s.	I + I
			PEB-related	… Other	BR	*r* = –.15; S	n.s.	I + I
Transport related identity importance: Public transport user (Murtagh et al., 2012. Study 1)	PEB-related	→	**Anti-PEB-related**	Number of journeys using car: Work	BR	*r* = –.03; S	**	I + I
			Anti-PEB-related	… School	BR	*r* =.37; M	n.s.	I + I
			Anti-PEB-related	… Other	BR	*r* =.12; S	n.s.	I + I

(Continues)

TABLE 3 (Continued)

Identity (Reference. Study number)	ID Theme	Direct.	PEB Theme	PEB	Measure IN/BR	Effect size	Sig.	ID+PEB Type
			PEB-related	Number of journeys using public transport: Work	BR	*r* =.37; M	**	I + I
			PEB-related	... School	BR	*r* =.22; S	*	I + I
			PEB-related	... Other	BR	*r* =.02; S	**	I + I
			PEB-related	Number of journeys by walking: Work	BR	*r* =.22; S	n.s.	I + I
			PEB-related	... School	BR	*r* = .02; S	n.s.	I + I
			PEB-related	... Other	BR	*r* = −.006; S	n.s.	I + I

Note. Column 1: Identity types are listed in alphabetical order, **bold text** = Dependent variables, not in bold text = Independent variables. Column 2: Identity (ID) theme: Related to PEB definition: Pro-environmental behaviour (PEB)-related, actively not related to the PEB definition: Anti-PEB-related, neither related nor unrelated to the PEB definition: Neutral to PEB related, or both actively unrelated, and related to the PEB definition: Anti- and PEB-related. Column 3: Direction (Direct.) with → = Identity associated with PEB, ← = PEB associated with identity, x = unknown. Column 4: PEB theme: Related to PEB definition: PEB-related, actively not related to the PEB definition and in **bold text**: Anti-PEB-related, or both actively unrelated, and related to the PEB definition and in ***bold italic text***: Anti-and PEB-related. Column 5: **Bold text** = Independent variables, not in bold text = Dependent variables, *italic text* = observed PEB, not in italic text = self-reported PEB, [a] =Interaction, USA = United States of America. Column 6: IN = intention PEB measure, BR = behaviour PEB measure, *italic text* = observed PEB, not in italic text = self-reported PEB. Column 7: Italic text = regression (*r*) calculated from beta (β), OR = odds ratio, SSMP = split sample multinomial probits, MP = multinomial probits, *d* = Cohen's *d*, x = unknown, S/M/L = small (x<.30)/Medium (.30>x<.50)/Large effect size (x>.50). Column 8: Significance (Sig.) as positive (+), or negative (-). Relationship strength as $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$, n.s. = non-significant, x = unknown. Column 9: Identity (ID) type: I = individually focussed identity congruent with PEB-identity theory, G = group focussed identity congruent with PEB-social identity theory, P = place focussed identity congruent with PEB-place identity theory + type of PEB: I = individually focussed, G = group focussed, P = place focussed.

TABLE 4 Research study design

Experimental	Identity (ID) (Reference. Study number)
Quasi-experimental (*n* = 8)	Environmental ID[29.1], Environmentalist ID[34.1], Environmentalist ID: Somewhat[34.1] and Strong[34.1], ID as environmentalists or not[33.1], ID maturity[29.1], Not-environmentalist ID[33.1], Place attachment with Bronx New York City[25.1]
Unknown (*n* = 1)	Social ID: Community ID [32.1]
Yes (*n* = 11)	Environmental self-ID[48.3, 49.1, 49.2, 50.3], Environmentally-conscious ID[6.2], Green consumer ID[6.5], Identification with food (and sub-categories: fruit, red meat, vegetables, white meat)[1.1], Personal ID[11.1, 12.1], Social ID[11.1, 12.1]
No (*n* = 84)	All other identities[Table 2]

3.2.1 | Aim 6: Different identities and different PEB's

Most frequently, individually focused identities/PEB-identity theory significantly associated with PEB (*n* = 90, 56%) compared with group-focused identities/PEB-group identity (*n* = 45, 35%) or place-focused identities/PEB-place identity theory (*n* = 5, 35%; Table 3, Columns 8 and 9). Of the significant associations, these were most frequently positive rather than negative for individually focused identities (*n* = 70, 78%), group-focused identities (*n* = 40, 89%), and place-focused identities (*n* = 5, 100%). Furthermore, individually focused PEBs were mostly studied (*n* = 260) and in relation to individually focused identities (*n* = 166; 64%). Far fewer group-focused PEBs were studied (*n* = 35), and these were often assessed in relation to group-focused identities (*n* = 28; 80%). Finally, few place-focused PEBs were assessed and in relation to group-focused identities (*n* = 9) or place-focused identities (*n* = 10). First, identity types (individual/group/place) linked to PEB levels of identity (PEB-identity/-social identity/-place identity theory) were often matched to the same type of PEB (individual/group/place). However, the review revealed that this matching was not always the case. Therefore, this review found support for the second assumptions of PEB levels of identity (Table 1, Rows 7–9). However, this evidence was mostly for place-focused identities/PEB-place identity theory.

3.2.2 | Aim 6: Which individually-focused identity best encourages and discourages PEB?

Individually focused identities, specifically, "self-identity in private nature conservation" (Lokhorst, Hoon, le Rutte, & de Snoo, 2014), "Fair Trade consumer identity" (Andorfer & Liebe, 2013), and "self-identity with environmental activism" (Fielding et al., 2008) are most relevant for encouraging individually focused behaviour,

namely, "self-reported intention to do private nature conservation" (Lokhorst et al., 2014) and "self-reported frequency of purchasing Fair Trade coffee in German participants" (Andorfer & Liebe, 2013) and group-focused behaviours, namely, "self-reported intention to do environmental activism in next six months" (Fielding et al., 2008). Therefore, this review finds further support for the second assumption of PEB levels of identity (Table 1, Row 7). Specifically, an individually focused identity is most relevant for encouraging group-, and individually focused behaviours.

Individually focused identities, specifically, "self-identity with food produced using genetic engineering" (Cook et al., 2002) and "transport related identity importance: cyclist" (Murtagh et al., 2012) are most relevant for discouraging individually focused behaviours ("prior frequency of purchasing food based on beliefs about additive content" and "prior frequency of purchasing food based on beliefs about pesticide use"—Cook et al., 2002; "self-reported number of journeys using public transport for work"—Murtagh et al., 2012). Therefore, this review finds support for the second assumptions of PEB levels of identity (Table 1, Row 7), specifically the aspect that this individually focused identity is most relevant for discouraging individually focused behaviours. Also, the findings support the assertion that individually focused identities are best for encouraging, rather than discouraging, PEB when compared with group- and place-focused identity types.

3.2.3 | Aim 6: Which group-focused identity best encourages and discourages PEB?

Group-focused identity types, "social identity: group identification" (White et al., 2009), "social identity: group membership of an environmental group" (Fielding et al., 2008), and "identity similarity with typical recyclers" (Mannetti, Pierro, & Livi, 2004), are most relevant for encouraging individually focused behaviour ("intent to recycle in the social identity*group norm sample"—White et al., 2009; "intent to recycle"—Mannetti et al., 2004) and group-focused behaviour ("intent to do environmental activism in next 6 months"—Fielding et al., 2008). Therefore, this review finds further support for the second assumption of PEB levels of identity (Table 1, Row 8). Specifically, the aspect, a group-focused identity, is most relevant for encouraging individually- and group-focused behaviours.

Group-focused identity types, "social identity: group identificatio"n (Terry et al., 1999) and "group identification rural" (Fielding et al., 2008), are most relevant for discouraging individually focused behaviour ("intent to recycle in the next fortnight: Time 1 and for the social identity*perceived behavioural control sample"—Terry et al., 1999) and place-focused behaviour ("intent for sustainable agricultural practice"—Fielding et al., 2008). Therefore, this review finds further support for the second assumption of PEB levels of identity (Table 1, Row 8). Specifically, the aspect, a group-focused identity, is most relevant for discouraging individually- and place-focused behaviours.

3.2.4 | Aim 6: Which place-focused identity best encourages and discourages PEB?

Place-focused identity types, "place identity-affect to Point Pelee National Park" (Halpenny, 2010) and "Environmental identity: identification with nature" (Swim et al., 2014), are most relevant for encouraging individually focused behaviour ("intent for general PEB" and "intent for Point Pelee National Park specific PEB"—Halpenny, 2010) and place-focused behaviour ("intent to increase amount pay for township open space"—Swim et al., 2014). Therefore, this review finds further support for the second assumption of PEB levels of identity (Table 1, Row 9). Specifically, the aspect, a place-focused identity, is most relevant for encouraging individually- and place-focused behaviours. Finally, our results support the notion that place-focused identity types are best for increasing PEB, rather than decreasing it. Yet it should be noted that research is scarce on this topic, and more studies could assess how place-identity types decrease PEB and cause anti-PEB.

3.2.5 | Aim 6: Summary of which identities best encourage and discourage PEBs

This review found support for the Assumptions 2a–c of PEB levels of identity (Table 1, Rows 7–9):

- An individually focused identity best encourages group- and individually focused PEBs than place-focused PEBs and discourages individually focused PEBs the best versus all the other PEBs. Lastly, individually focused identity best encourages rather than discourages PEB (Table 1, Row 7).
- Group-focused identity best encourages individually- and group-focused PEBs than place-focused PEBs and discourages individually- and place-focused PEBs the best rather than group-focused PEBs (Table 1, Row 8).
- Place-focused identity best encourages individually- and place-focused PEBs and only encourages PEBs rather than discouraging them (Table 1, Row 9). However, this finding is preliminary, because our systematic review reveals that research is scarce on how place-identity types discourage PEB or can cause anti-PEB.

4 | DISCUSSION

We highlighted how to more clearly understand theories of identity in PEB research and hereby the concept of identity in general. For the first time, we proposed an integrated theory of identity that includes the notion of PEB levels of identity, specifically, PEB-identity theory, PEB-social identity theory, and PEB-place identity theory. We provided the definitions, assumptions, and evidence for such assumptions. Furthermore, these theories were devised based on PEB literature only, because we sought to ascertain understanding of this context. However, the theory that we proposed seems not

constrained to the PEB context because of the generalizability of the assumptions included in it. Future research can use and build on our assumptions that have been deducted based on the PEB literature and apply in other contexts such as moral/pro-social areas (to which PEB is a subset). Finally, after completing the review, some findings emerged that could not be explained by the assumptions included in our integrated theory. Therefore, we provide additional assumptions, which we document throughout the discussion, to explain the additional findings. Before discussing these findings, we summarise what we revealed.

Specifically, we tested the possibility of multiple identities (Assumptions 1a–c), and our empirical evidence corroborated these assumptions. We also revealed that most research focused on individually focused identity types. Additionally, we tested if identities related to any PEB type (Assumptions 2a–c) and empirical evidence corroborated these assumptions, where we revealed that most research found individually focused identities positively relating to individually- and group-focused behaviours the most. Moreover, from explanations of the nonsignificant findings, we will reveal a further set of assumptions. Specifically, how these identities can be made salient (Assumptions 3a–c), whereby Assumption 3a is mostly supported. That is, we found that individually focused identities can be made salient depending on the context a person is in and that this can subsequently promote particular types of PEBs. Furthermore, we reveal how these identities can be held in mind in a specific order known as the hierarchy of salience (Assumptions 4a–c). Specifically, we only find evidence for the hierarchy of salience of these individually focused and group-focused identities (4a/A4b, respectively). Finally, we reveal how consumers can have competing identities, meaning identities need to be similar in behavioural expectations for behaviour to occur (Assumptions 5a–c). Specifically, we only found evidence of competing identities for these individually focused and group-focused identities (5a/A5b, respectively). Below the assumptions and evidence are further discussed.

4.1 | Assumptions 1a–c: The possibility of multiple identities (Aims 1 and 2)

A trend towards introducing new identity types is evidenced. That is, the large number of identities studied showed a clear need for more consolidation in this field. We propose that our document is useful to avoid duplication as we can see what identities/theories have been studied. For example, if a researcher is interested in studying a certain identity type, Tables 1 and 2 can be used to see what prior empirical research has already been conducted on the same or similar identity type.

Our findings further reveal which identity is explained by which PEB levels of identity, namely, PEB-identity theory, PEB-social identity theory, or PEB-place identity theory. PEB-identity theory focusses on how the individual sees themselves personally/individually. PEB-social identity theory focusses on how people see themselves based on a group of people's collective identity. PEB-place identity theory focusses on how people see themselves based on a specific place's identity. These distinctions, individually- ("personal identity"; Costa-Pinto et al., 2014), group- ("social identity"; Costa-Pinto et al., 2016), and place-focused ("place identity-affect to Point Pelee national park"; Halpenny, 2010) identity types, were reflected in these 99 different identities and may explain why we did not always find significant results.

We did not always find significant results. We provide three reasons for this finding. The first reason is because each person has more than one identity present in any given situation (individually-/group-/place-focused; Halpenny, 2010; Murtagh et al., 2012; Stryker & Burke, 2000). Second is the hierarchy of salience, whereby these identities are not equally ordered in mind (Costa-Pinto et al., 2014, 2016; Eagly & Chaiken, 1993; Murtagh et al., 2012; Stryker & Burke, 2000). Third is competing identities, whereby these identities have different foci and might not be aligned with each other (Eagly & Chaiken, 1993; Stryker & Burke, 2000). Therefore, the same/similar set of behaviours expected may be different and consequently conflict. This notion is explicitly assumed by identity theory to explain why behaviour occurs (Eagly & Chaiken, 1993; Stryker & Burke, 2000). This assumption needs to be adopted for this context to aid understanding for why significant results did not always prevail. To guide this discussion, we will detail further our reasons why there were not always significant results in the discussion after outlining the hierarchy of salience and competing identities.

In the PEB context, each person has more than one identity present in any given situation. If we assume all the identities documented in the review are different from each other, and can be adopted by any one person, 99 identities can be held in mind, which are relevant for PEB. These identities are prioritised, and more salient, depending on how they are cued. Depending on which identities are salient will depend on which set of expectations and behaviours are prioritised. As these identities can be differently prioritised depending on the cue, these salient identities are transient and ordered in mind, and not all are given equal importance when deciding how to see oneself (PEB-identity theory), in relation to groups social (PEB-social identity theory) or in relation to places (PEB-place identity theory). Furthermore, the salient identities are assumed to be similar because the set of behaviours associated with the identities need to be congruent for behaviour to occur (Eagly & Chaiken, 1993). What we mean by "similar" is that the set of expectations and behaviours linked to the identities are not conflicting (Eagly & Chaiken, 1993). If these identities/behaviours were conflicting, behaviour stops until there is more external and/or internal support to override and select identities/behaviours which are congruent (Eagly & Chaiken, 1993). Therefore, PEB may have not occurred because these multiple identities were present, ordered in a specific way, and were competing and conflicting leading to a lack of PEB. In contrast, PEB may have occurred because these multiple identities were present, ordered in a specific way, and were not competing and conflicting leading to PEB. However, the assumption of multiple identities being relevant in a situation, along with competing/conflicting identities, was scant.

4.2 | Assumptions 2a-c: Multiple identity relationships with PEB types (Aims 3–6)

A key implication of documenting identity-PEB associations is that anyone interested in this topic can now find an appropriate identity type for their specific PEB (Table 3). Furthermore, identity-PEB associations were not always significant, which did not always make sense which we now discuss. A possible reason for this occurrence can be seen in how PEBs were studied. For example, some studies make statements in relation to identity and "observed PEB" while measuring past PEB only (Murtagh et al., 2012). It seems plausible that past PEB can make the current identity salient that leads to future PEB (van der Werff et al., 2014a). However, the past, present, and future of identity and PEB were not always clearly defined/measured. This occurrence may contribute to the differences in significance between and within studies. Therefore, future research would benefit from understanding the past, present, and future of identity and PEB, to see how longitudinally it can change.

Furthermore, we observed individually- and group-focused identities significantly associating with PEB more than place-focused identities. A potential explanation might be that PEB from a place-identity perspective depends on whether environmental concerns are consistent with the place's character (Kneafsey, 1998; Kudryavtsev, Krasny, & Stedman, 2012). This consistency is likely to act as a moderator for the effects of place-identity on PEB, thereby suppressing the direct effect of place-identity on PEB (Biddle, Bank, & Slavings, 1987; Stedman, 2002).

Furthermore, identities were often significantly related to PEB regardless of the type of PEB measure (intention or behaviour). That is, identities seem to be equally influential for intentions and behaviours, suggesting that there is no obvious intention–behaviour gap (Kollmuss & Agyeman, 2002). A reason for this finding might be that certain psychological biases, including social desirability and conformity, may have equally affected intention and behavioural measures (Kondo, Saito, Deguchi, Hirayama, & Acar, 2010). Social desirability is where individuals carry out a behaviour based on what they think other individuals expect of them. As PEB is socially desirable and the right thing to do (Allen et al., 2018), people may report they do the behaviour to look good (Kondo et al., 2010). A similar line of reasoning can be proposed for the issue of conformity, referring to responses based on what respondents think others plan to do and do (Haney, Banks, & Zimbardo, 1973; Kondo et al., 2010). As carrying out PEB is considered a behaviour that is commonly planned (intention) and carried out by other people (behaviour), people may be motivated to conform in both settings, again to look good. However, no intention–behaviour gap could also mean that it therefore does not matter whether we measure intentions rather than behaviour when understanding the contributions of identity for PEB. That is, we perhaps reveal that critiques on the prevalence of intentions compared with behavioural measures (e.g., Kormos & Gifford, 2014; Wood et al., 2015) are less problematic than sometimes thought. However, future research would benefit from collectively assessing these biases, such as checking for social desirability and conformity (Kondo et al., 2010) alongside self-reported intentions, behaviours and observed behaviours collectively, to examine if these biases exist in both these intention–behaviour settings, as well as if this intention–behaviour gap does not exist. Furthermore, social desirability and conformity are related and occur in conjunction with identity.

Social desirability is linked with either an individually-, group-, and place-focused identity, as research found that when a person has never challenged their identity, these people act socially desirable (Orlofsky, Marcia, & Lesser, 1973; Phillips, 2009). This finding indicates the conditions under which people might be open to being socially desirable, as well as being open to new identities (Marcia, 1966; Phillips, 2009). Future research could explore such issues, for example, if social desirability indicators could be used to understand if the consumer(s) in question are willing to take on new, and more desirable identities for carrying out PEB.

Furthermore, conformity with the expectations of others is linked with individually-, group-, and place-focused identity. Research found that a person with a strong group-focused identity, compared with a person with a weak group-focused identity, would conform to the group-focused identity norms the most, especially when this identity was challenged by others (under threat; Falomir-Pichastor, Gabarrot, & Mugny, 2009; Jetten, Postmes, & McAuliffe, 2002) and vice versa. This finding implies that the individually- and place-focused identity are less likely to be acted upon when the group-focused identity is strong and is being challenged by others, whereas the opposite might happen if the group-focused identity is weak and not being challenged by others (Costa-Pinto et al., 2014, 2016). Therefore, group conformity indicators can be used to decide how best to encourage people to carry out PEB and via which identity, individually-, group-, and/or place-focused identity, depending on their likelihood to conform to their group-focused identity norms and expectations or their own individually- and place-focused norms and expectations.

Finally, some studies find positive relationships, and others find negative relationships between identity and behaviour. These relationships depend to a large extent on the specific identity studied. To clarify which specific type of identity was studied and which specific behaviour was studied, identities and behaviours (identity/behaviour) can be further categorised as follows (Table 3; Columns 2 and 4; identity theme, and PEB theme), respectively:

- PEB-related—The identity/behaviour were actively related to the PEB definition.
- Anti-PEB-related—The identity/behaviour were actively *NOT* related to the PEB definition.
- Neutral to PEB-related—The identity/behaviour were neither related nor unrelated to the PEB definition
- Anti- and PEB-related—The identity/behaviour were both actively unrelated, and related to the PEB definition.

Including this categorisation enables us to explore in more detail (inconsistencies in) the negative and positive relationships between identity and behaviour. For example, although we would expect that a "place identity of island high in environmental protection" (Hernández,

Martín, Ruiz, & Hidalgo, 2010) would positively relate to PEB-related actions and negatively to anti-PEB-related actions, the relationship between identity and anti-PEB-related actions were not negative. Furthermore, surprisingly "self-identity with food produced using genetic engineering" sometimes positively and sometimes negatively related to an anti-PEB-related action. However, our systematic review also revealed that anti-PEB-related actions were rarely studied, so (in)congruency of anti-PEB-related identity and anti-PEB-related behaviour needs further assessment because we only see a few case examples (Table 3, Column 4 in bold/bold and italic text). Therefore, the qualitative and detailed literature inspection of this systematic review revealed some surprising/unexpected relationships and pointed towards new areas for future research. Additionally, our review revealed many nonsignificant findings, which might be best explained by extending our theory with additional assumptions, specifically, the many identities can be made salient (Assumptions 3a–c).

4.3 | Assumptions 3a–c: Identities can be made salient

Another observation was that there were nonsignificant results, which may be because of the context a person is in, for example, as a person might have had more relevant social cues which was evidenced to some extent in some research (e.g., Costa-Pinto et al., 2014, 2016), and this provides preliminary evidence that researchers could make different identities salient by changing the context. Before describing these experimental study results, we first want to address an additional underlying assumption that seems relevant to reveal based on this preliminary evidence: PEB levels of identity, specifically, PEB-identity, -social identity, and -place identity theory, assume that *individually-, group-, and place-focused identities can be made salient depending on the context a person is in, which in turns promotes particular types of PEBs: Individually-, group-, or place-focused* (Table 1, Rows 10–12). Based on past experimental results in the field, we reveal that our theory can be even further extended with additional assumptions, specifically, the hierarchy of salience of identities (Assumptions 4a–c).

4.4 | Assumptions 4a-c: The hierarchy of salience of identities

Now, we describe experimental results in relation to our assumptions. Personal identity, which we refer to as an individually focused identity, and social identity, which we refer to as a group-focused identity, were present and measured via manipulation checks (supporting Assumptions 1a and b; Costa-Pinto et al., 2014, 2016). Furthermore, both the individually- and group-focused identity were successfully made salient, whereby people acted in line with the individually focused identity regardless of the identity experimental condition (supporting Assumption 2a). Perhaps, a group-focused identity is important for behaviour but not necessarily irrespective of whether the group with said identity is present (challenging Assumption 2b). That is, we reveal that PEB theories of identity need to consider that consumers might hold these identities in mind in a specific order, although that order can change. Based on our findings (Table 1, Rows 13–15), we therefore suggest that there might be a *hierarchy of salience.* Specifically, we suggest that individually focused identities are in general more dominant than group-focused identities (Costa-Pinto et al., 2014, 2016). The hierarchy seems less clear regarding place-focused identities because of the scant research (Kudryavtsev et al., 2012), although we speculate that individually focused identities are in general also more salient than place-focused identities. What is important to realize is that the above described hierarchy might change depending on context. For example, we anticipate that group-focused identities might be more dominant than the individually focused identities if the person strongly identifies with the group or if the relevant group of people are physically present. Based on these past experimental results in the field, we finally reveal that our theory can be even further extended with additional assumptions, specifically, the notion of competing identities (Assumptions 5a–c).

4.5 | Assumptions 5a-c: Competing identities

Our research indicates that our theory needs to consider that consumers can have competing identities. This means that before any behaviour occurs, the different individually-, group-, and place-focused identities need to be similar enough and/or be aligned enough for behaviour to occur (Table 1, Rows 16–18). For example, actual behaviour is less likely to occur when people identify relatively weak with a group or place. Yet despite such relatively weak identities, behaviour might occur if the relevant group or place is physically present (Costa-Pinto et al., 2014, 2016; Kudryavtsev et al., 2012). That is, the presence of the group or place may function as a cue, or "make salient", the relevant identity. However, the "boosting effect" of a physically present group or place might be less effective when people identify strongly with a group or place (Dunlap & McCright, 2008; Swim et al., 2014). One possible reason for this is that merely thinking about the presence of a group or place may function as a cue, or "make salient", the group or place identity and lead to the corresponding behaviours. Therefore, the extent to which people identify with the group/place will determine which cues are needed, and how effective these cues will be for making salient the group/place identity. However, more research needs to be conducted to test this notion of competing identities for place-focused identities especially as empirical research is largely missing.

4.6 | Further support for hierarchy of salience (Assumptions 4a–c) and competing identities (Assumptions 5a–c)

Another observation was that some results did not always make sense, for example, when the PEB-focused identity increased, the

similar behaviour, and a PEB focused behaviour, decreased (Murtagh et al., 2012). More in-depth inspection reveals this competing/conflicting proposition but in behavioural focus, which links back to identity. This study assessed "transport-related identity importance: cyclist" along with other identities, such as "transport related identity importance: public transport user." The former identity was negatively associated with "number of journeys using public transport: work." We assumed that in this study a pro-cycling identity was more important than the pro-public transport identity. The set of behaviours expected that are pro-cycling rather than pro-public transportation were prioritised. Therefore, the identities/behaviours conflicted/competed with pro-cycling identity overriding and leading to cycling and not public transport behaviour (one cannot take public transport and cycle to work). Consequently, our systematic review reveals that it is important to carefully choose the identity type when aiming to encourage or discourage PEB. Yet, this finding is preliminary as research into the ordering effects of identities, or how one identity/behaviour can be overridden is largely missing. However, we propose that these two additional main assumptions are further relevant based on this limited evidence—consumers hold these identities in mind in a specific order that can change and is referred to as the hierarchy of salience (Assumptions 4a–c), and consumers have competing identities meaning, the many identities need to be similar in behavioural expectations for behaviour to occur (Assumptions 5a–c).

The assumptions of competing and conflicting identities (Assumptions 4a–c) and hierarchy of salience (Assumptions 5a–c) are consistent with goal-framing theory (GFT; Lindenberg & Steg, 2007). GFT suggests that three goals (hedonic, gain, and normative) are competing/conflicting and that there is a hierarchy of salience of goals. That is, the hedonic goal needs the least external support (like individually focused identities). The normative goal needs the most external support, with the gain goal in the middle (like place- and group-focused identities, respectively). Aligned with the assumptions of GFT; making salient (cueing) collectively the place-, group-, and individually focused identities are recommended and can be achieved using cues that are place (place-focused identity), people (group-focused identity), and self (individually focused identity) focused. Specifically, the cue needs to focus on pro-PEB intention and impact, tailored to the person in question and provided in the form of environmental labelling and/or feedback, similarly to GFT recommended approaches (Lindenberg & Steg, 2007). To this end, we now introduce our final methodological contributions of this review.

5 | METHODOLOGICAL CONTRIBUTIONS

To contribute to the methodological development of this field, we introduced the PRISMA method (Moher et al., 2009), a well-known and widely accepted systematic review method from the medical sciences (Drubbel et al., 2014; Holden et al., 2014). By methodically applying the reproducible steps found in the PRISMA guidelines, we achieved two benefits. First, these guidelines can be used to ensure that future reviews will be conducted in a robust and replicable manner. Second, as the steps are easily replicable, future research can build and expand upon this review, which is necessary as the field of identity, and PEB is blossoming. Overall, we suggest that our use of the PRISMA methodology will help to streamline future research reviews within this field, as well as facilitate comparisons with other fields.

Furthermore, methodologically in terms of the research we identified, we noticed identity-PEB associations are often established using correlational designs (Table 4). Making identities salient, for example by cueing, could help to strengthen the identity–behaviour relationship. However, our review shows that making identities salient does sometimes, but not always, result in promoting PEB. For example, making salient environmental self-identity by asking people to note their past PEBs positively affected the number of times people chose a pro-environmental product (e.g., van der Werff et al., 2014a, 2014b) but did not do so in another study (e.g., van der Werff et al., 2013). Future research could focus more strongly on experimental studies in which identity is made salient (for example, via cueing) to see under what conditions saliency affects behaviour.

By conducting this systematic review, we also reveal that only eight papers study their selected identity more than once (Costa-Pinto et al., 2014; Fielding et al., 2008; Nigbur et al., 2010; Owen, Videras, & Wu, 2010; Tam, 2013; van der Werff et al., 2013, van der Werff et al., 2014a, 2014b). Furthermore, as indicated by Table 2, many identities are not explicitly defined. That is, research articles tend to create new identity constructs that are rarely replicated. Furthermore, we are not able to observe whether identities that are labelled similarly actually measure the same construct. As a meta-analysis relies on averaging the effect sizes (weighted by its standard error) from many studies for a single construct (i.e., a single identity type). However, only a single effect size for each identity type is often reported, making this weighted averaging for different constructs not possible at this point. Yet, what we can do is report the observed effect sizes. By doing so, our systematic review can thus still provide insight into the current state of the literature.

Furthermore, as reporting was not always fully transparent, we recommend what to report in future studies and to do so more transparently. These recommendations emerged because of how identity in PEB research has previously been reported and conducted upon. Specifically, research would benefit from reporting on the following:

1. Explicitly stating all identity types tested (individually-, group-, and/or place-identity) AND state how they are PEB-related, anti-PEB-related, and/or neutral to PEB-related.
2. Explicitly stating the corresponding theory/definition/assumptions of identity in PEB research.
3. Explicitly stating all PEB types tested (individually-, group-, and/or place-PEBs) AND state how they are PEB-related, anti-PEB-related, and/or neutral to PEB-related.

4. Explicitly stating *exactly* all the identity and PEB relationships, in terms of direction (positive and/or negative AND identity predicting behaviour and/or vice versa, AND strength, AND significance level).
5. Explicitly stating the measurements of identity (self-reported and/or observed).
6. Explicitly stating the measurements of PEBs (intention, and/or behaviour AND self-reported and/or observed).
7. Explicitly stating the study design such the sample (students, and/or non-students AND whether the sample was representative of population in question).
8. Whether research controlled for demographics of participants which could affect the effect estimate.
9. Whether the randomisation of participants to experimental conditions and for recruitment of correlational research was conducted.
10. Whether the inclusion of other controls such as social desirability and conformity biases were assessed and reporting on the effects of these.
11. Reporting precisely whether the research was experimental, quasi-experimental, correlational and/or longitudinal in design.
12. Explicitly stating whether pre-/post-identity checks for baseline identity was assessed to see if the before and after results of pure identity testing affect identity in relation to PEB.

Finally, identity as a separate variable has been criticized, mainly because the identities are considered to overlap with the theory of planned behaviour variables, for example (Fishbein & Ajzen, 2010). Although identity is similar to variables found in the theory of planned behaviour both theoretically (Fielding & Hornsey, 2016) and empirically (Rise, Sheeran, & Hukkelberg, 2010), regardless, identities are important uniquely (Murtagh et al., 2012). Furthermore, pragmatically, a large growth in the field of identity-PEB associations, alongside the theory of planned behaviour exists, suggesting that identity provides a unique contribution (Rise et al., 2010). Therefore, we shed light on the identities theoretically to allow future work to accurately and comprehensively assess this potential overlap of identity and the theory of planned behaviour, for example. Although the latter part was outside the remint of this article, we show how future research can assess this potential overlap with dominant variables successfully for predicting PEB. For example, identities should be considered in relation to other concepts incorporated in the theory of planned behaviour when explaining PEB as previous research has used the tenets of the theory of planned behaviour to predict PEB attitudes and behaviours (Fielding, McDonald, & Louis, 2008; Fielding, Terry, et al., 2008; Nigbur et al., 2010; Rise et al., 2010; Shaw et al., 2000; Sparks & Shepherd, 1992; Terry et al., 1999; White et al., 2009; Yazdanpanah & Forouzani, 2015). To move the field forward theoretically, practically, and methodologically, we provide a theoretical framework on how to test identities in relation to other psychological variables relevant for PEB research (Figure 1).

6 | CONCLUSION

We set out to encourage PEB because it is an environmental and societal concern. We proposed a developing field for addressing this concern was to focus on how consumers see themselves (their identity). However, a theoretical assessment of the empirical evidence on this topic was missing. Therefore, we ascertained how identity in PEB research can be theorised, namely, under the umbrella term PEB levels of identity, specifically, PEB-identity theory, PEB-social identity theory, and PEB-place identity theory. By conducting a systematic review, using the PRISMA guidelines, we assessed identity in PEB research theoretically. Based on these theorisations, we identified from the literature the extent to which we found evidence for the assumptions associated with the theories (Table 1). In 62 studies, one main assumption evidenced was consumers can have plural individually-/group-/place-identities relevant in this context (Table 2). Furthermore, we evidenced the assumption that identity and PEB are associated (Table 3), where designs were mostly correlational (Table 4). To move the field forward theoretically, practically, and methodologically, we provide a theoretical framework of how to test identities in relation to other psychological variables relevant for PEB research (Figure 1). Finally, we introduce the PRISMA guidelines to this field. The guides mean this review can be easily built upon. Furthermore, future reviews using such guides can be easily replicated and updated.

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REFERENCES

[N] Citations included in the systematic review.

Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour & Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Akerlof, G. A., & Kranton, R. E. (2010). *Identity economics: How identities shape our work, wages, and well-being*. Princeton: Princeton University Press. Retrieved June 21, 2014, from:. https://ideas.repec.org/b/pup/pbooks/9108.html

Allen, M. R., Dube, O. P., Solecki, W., Aragón-Durand, F., Cramer, W., Humphreys, S., … Zickfeld, K. (2018). Framing and context. In V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D. Roberts, J. Skea, P. R. Shukla, et al. (Eds.), In Press. Available from*Global warming of 1.5°C. An Intergovernmental Panel on Climate Change Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*. n/a: Geneva. https://www.ipcc.ch/site/assets/uploads/sites/2/2018/11/SR15_Chapter1_Low_Res.pdf

[1]Allen, M. W., & Baines, S. (2002). Manipulating the symbolic meaning of meat to encourage greater acceptance of fruits and vegetables and less proclivity for red and white meat. *Appetite*, *38*(2), 118–130. https://doi.org/10.1006/appe.2001.0474

[2]Andorfer, V. A., & Liebe, U. (2013). Consumer behaviour in moral markets. On the relevance of identity, justice beliefs, social norms, status, and trust in ethical consumption. *European Sociological Review*, *29*, 1251–1265. https://doi.org/10.1093/esr/jct014

[3]Barata, R., & Castro, P. (2013). "I feel recycling matters … sometimes": The negative influence of ambivalence on waste separation among teenagers. *The Social Science Journal*, *50*(3), 313–320. https://doi.org/10.1016/j.soscij.2013.05.007

[4]Bartels, J., & Hoogendam, K. (2011). The role of social identity and attitudes toward sustainability brands in buying behaviours for organic products. *Journal of Brand Management*, *18*(9), 697–708. https://doi.org/10.1057/bm.2011.3

[5]Bartels, J., & Onwezen, M. C. (2014). Consumers' willingness to buy products with environmental and ethical claims: The roles of social representations and social identity. *International Journal of Consumer Studies*, *38*(1), 82–89. https://doi.org/10.1111/ijcs.12067

[6]Bhattacharjee, A., Berger, J., & Menon, G. (2014). When identity marketing backfires: Consumer agency in identity expression. *Journal of Consumer Research*, *41*(2), 294–309. https://doi.org/10.1086/676125

Biddle, B. J., Bank, B. J., & Slavings, R. L. (1987). Norms, preferences, identities and retention decisions. *Social Psychology Quarterly*, *50*(4), 322–337. https://doi.org/10.2307/2786817

[7]Bissonnette, M. M., & Contento, I. R. (2001). Adolescents' perspectives and food choice behaviours in terms of the environmental impacts of food production practices: Application of a psychosocial model. *Journal of Nutrition Education*, *33*(2), 72–82. https://doi.org/10.1016/S1499-4046(06)60170-X

Bossuyt, P., Davenport, C., Deeks, J., Hyde, C., Leeflang, M., Scholten, R.& (2008). Cochrane handbook for systematic reviews of diagnostic test accuracy. *The Cochrane Collaboration*.

[8]Brügger, A., Kaiser, F. G., & Roczen, N. (2011). One for all? Connectedness to nature, inclusion of nature, environmental identity, and implicit association with nature. *European Psychologist*, *16*(4), 324. https://doi.org/10.1027/1016-9040/a000032

[9]Castro, P., Garrido, M., Reis, E., & Menezes, J. (2009). Ambivalence and conservation behaviour: An exploratory study on the recycling of metal cans. *Journal of Environmental Psychology*, *29*(1), 24–33. https://doi.org/10.1016/j.jenvp.2008.11.003

Chernev, A., & Blair, S. (2015). Doing well by doing good: The benevolent halo of corporate social responsibility. *Journal of Consumer Research*, *41*(6), 1412–1425. https://doi.org/10.1086/680089

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, *20*(1), 37–46. https://doi.org/10.1177/001316446002000104

Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*(1), 155–159. https://doi.org/10.1037/0033-2909.112.1.155

[10]Cook, A. J., Kerr, G. N., & Moore, K. (2002). Attitudes and intentions towards purchasing GM food. *Journal of Economic Psychology*, *23*(5), 557–572. https://doi.org/10.1016/S0167-4870(02)00117-4

[11]Costa-Pinto, D., Herter, M. M., Rossi, P., & Borges, A. (2014). Going green for self or for others? Gender and identity salience effects on sustainable consumption. *International Journal of Consumer Studies*, *38*(5), 540–549. https://doi.org/10.1111/ijcs.12114

[12]Costa-Pinto, D., Nique, W., Herter, M., & Borges, A. (2016). Green consumers and their identities: How identities change the motivation for green consumption. *International Journal of Consumer Studies*, *40*(6), 742–753. https://doi.org/10.1111/ijcs.12282

Dagher, G. K., & Itani, O. (2014). Factors influencing green purchasing behaviour: Empirical evidence from the Lebanese consumers. *Journal of Consumer Behaviour*, *13*(3), 188–195. https://doi.org/10.1002/cb.1482

[13]Davis, J. L., Le, B., & Coy, A. E. (2011). Building a model of commitment to the natural environment to predict ecological behaviour and willingness to sacrifice. *Journal of Environmental Psychology*, *31*, 257–265. https://doi.org/10.1016/j.jenvp.2011.01.004

De Groot, J. I. M., Schubert, I., & Thøgersen, J. (2016). Morality and green consumer behaviour: A psychological perspective'. In D. Shaw, A. Chatzidakis, & M. Carrington (Eds.), *Ethics and morality in consumption: Interdisciplinary perspectives*. London: Routledge. https://doi.org/10.4324/9781315764320

[14]Dono, J., Webb, J., & Richardson, B. (2010). The relationship between environmental activism, pro-environmental behaviour and social identity. *Journal of Environmental Psychology*, *30*(2), 178–186. https://doi.org/10.1016/j.jenvp.2009.11.006

Drubbel, I., Numans, M. E., Kranenburg, G., Bleijenberg, N., de Wit, N. J., & Schuurmans, M. J. (2014). Screening for frailty in primary care: A systematic review of the psychometric properties of the frailty index in community-dwelling older people. *BioMed Central Geriatrics*, *14*(1), 27. https://doi.org/10.1186/1471-2318-14-27

[15]Dunlap, R. E., & McCright, A. M. (2008). Social movement identity: Validating a measure of identification with the environmental movement*. *Social Science Quarterly*, *89*(5), 1045–1065. https://doi.org/10.1111/j.1540-6237.2008.00573.x

Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Orlando, FL, US: Harcourt Brace Jovanovich College Publishers. https://doi.org/10.1002/mar.4220120509

Falomir-Pichastor, J. M., Gabarrot, F., & Mugny, G. (2009). Conformity and identity threat: The role of ingroup identification. *Swiss Journal of Psychology*, *68*(2), 79–87. https://doi.org/10.1024/1421-0185.68.2.79

Field, A. P. (2005). Is the meta-analysis of correlation coefficients accurate when population correlations vary? *Psychological Methods*, *10*(4), 444–467. ISSN:1082-989X. https://doi.org/10.1037/1082-989X.10.4.444

Fielding, K. S., & Hornsey, M. J. (2016). A social identity analysis of climate change and environmental attitudes and behaviours: Insights and opportunities. *Frontiers in Psychology*, *7*, 121. https://doi.org/10.3389/fpsyg.2016.00121

[16]Fielding, K. S., McDonald, R., & Louis, W. R. (2008). Theory of planned behaviour, identity and intentions to engage in environmental activism. *Journal of Environmental Psychology*, *28*(4), 318–326. https://doi.org/10.1016/j.jenvp.2008.03.003

[17]Fielding, K. S., Terry, D. J., Masser, B. M., & Hogg, M. A. (2008). Integrating social identity theory and the theory of planned behaviour to explain decisions to engage in sustainable agricultural practices. *British Journal of Social Psychology*, *47*(1), 23–48. https://doi.org/10.1348/014466607X206792

Fishbein, M., & Ajzen, I. (2010). *Predicting and changing behaviour: The reasoned action approach*. New York: Taylor & Francis. https://doi.org/10.4324/9780203838020

Fritsche, I., Barth, M., Jugert, P., Masson, T., & Reese, G. (2017). A social identity model of pro-environmental action (SIMPEA). *Psychological Review*, *125*(2), 245–269. https://doi.org/10.1037/rev0000090

Gatersleben, B., Murtagh, N., Cherry, M., & Watkins, M. (2017). Moral, wasteful, frugal, or thrifty? Identifying consumer identities to understand and manage pro-environmental behaviour. *Environment and Behaviour*, *51*, 24–49. https://doi.org/10.1177/0013916517733782

Gershoff, A. D., & Frels, J. K. (2015). What makes it green? The role of centrality of green attributes in evaluations of the greenness of products. *Journal of Marketing*, *79*(1), 97–110. https://doi.org/10.1509/jm.13.0303

Gilal, F. G., Zhang, J., Gilal, N. G., & Gilal, R. G. (2019). Linking self-determined needs and word of mouth to consumer e-waste disposal behaviour: A test of basic psychological needs theory. *Journal of Consumer Behaviour*, *18*(1), 12–24. https://doi.org/10.1002/cb.1744

Graham-Rowe, E., Jessop, D. C., & Sparks, P. (2015). Predicting household food waste reduction using an extended theory of planned behaviour. *Resources, Conservation and Recycling*, *101*, 194–202. https://doi.org/10.1016/j.resconrec.2015.05.020

[18]Gupta, S., & Ogden, D. T. (2009). To buy or not to buy? A social dilemma perspective on green buying. *Journal of Consumer Marketing*, *26*(6), 376–391. https://doi.org/10.1108/07363760910988201

[19]Halpenny, E. A. (2010). Pro-environmental behaviours and park visitors: The effect of place attachment. *Journal of Environmental Psychology*, *30*(4), 409–421. https://doi.org/10.1016/j.jenvp.2010.04.006

Hamerman, E. J., Rudell, F., & Martins, C. M. (2018). Factors that predict taking restaurant leftovers: Strategies for reducing food waste. *Journal of Consumer Behaviour*, *17*(1), 94–104. https://doi.org/10.1002/cb.1700

Haney, C., Banks, W. C., & Zimbardo, P. G. (1973). A study of prisoners and guards in a simulated prison. *Naval Research Reviews*, *9*, 1–17. ISSN: 0028-145X

[20]Hernández, B., Martín, A. M., Ruiz, C., & Hidalgo, M. D. C. (2010). The role of place identity and place attachment in breaking environmental protection laws. *Journal of Environmental Psychology*, *30*(3), 281–288. https://doi.org/10.1016/j.jenvp.2010.01.009

Higgins, J. P. T., & Green, S. eds (2011). Cochrane handbook for systematic reviews of interventions Version 5.1.0 [updated March 2011]. The Cochrane Collaboration, 2011. Available from www.cochrane-handbook.org.

[21]Hinds, J., & Sparks, P. (2008). Engaging with the natural environment: The role of affective connection and identity. *Journal of Environmental Psychology*, *28*(2), 109–120. https://doi.org/10.1016/j.jenvp.2007.11.001

Hogg, M. A., Terry, D. J., & White, K. M. (1995). A tale of two theories: A critical comparison of identity theory with social identity theory. *Social Psychology Quarterly*, *58*(4), 255–269. https://doi.org/10.2307/2787127

Holden, M. A., Haywood, K. L., Potia, T. A., Gee, M., & McLean, S. (2014). Recommendations for exercise adherence measures in musculoskeletal settings: A systematic review and consensus meeting (protocol). *Systematic Reviews*, *3*(1), 10. https://doi.org/10.1186/2046-4053-3-10

Jetten, J., Postmes, T., & McAuliffe, B. J. (2002). 'We're all individuals': Group norms of individualism and collectivism, levels of identification and identity threat. *European Journal of Social Psychology*, *32*(2), 189–207. https://doi.org/10.1002/ejsp.65

[22]Juneman, A., & Rufaedah, A. (2013). Influence of five types of ecological attachments on general pro-environmental behaviour. *Procedia-Social & Behavioural Sciences*, *85*, 535–543. https://doi.org/10.1016/j.sbspro.2013.08.382

Khare, A. (2015a). Antecedents to green buying behaviour: A study on consumers in an emerging economy. *Marketing Intelligence & Planning*, *33*(3), 309–329. https://doi.org/10.1108/MIP-05-2014-0083

Khare, A. (2015b). Influence of green self-identity, past environmental behaviour and income on Indian consumers' environmentally friendly behaviour. *Journal of Global Scholars of Marketing Science*, *25*(4), 379–395. https://doi.org/10.1080/21639159.2015.1073423

[23]Kiesling, F. M., & Manning, C. M. (2010). How green is your thumb? Environmental gardening identity and ecological gardening practices. *Journal of Environmental Psychology*, *30*(3), 315–327. https://doi.org/10.1016/j.jenvp.2010.02.004

[24]Klineberg, S. L., McKeever, M., & Rothenbach, B. (1998). Demographic predictors of environmental concern: It does make a difference how it's measured: Research on the environment. *Social Science Quarterly*, *79*(4), 734–753. ISSN: 0038-4941

Klöckner, C. A. (2013). A comprehensive model of the psychology of environmental behaviour—A meta-analysis. *Global Environmental Change*, *23*(5), 1028–1038. https://doi.org/10.1016/j.gloenvcha.2013.05.014

Kneafsey, M. (1998). Tourism and place identity: A case-study in rural Ireland. *Irish Geography*, *31*(2), 111–123. https://doi.org/10.1080/00750779809478623

Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behaviour? *Environmental Education Research*, *8*(3), 239–260. https://doi.org/10.1080/13504620220145401

Kondo, C., Saito, C., Deguchi, A., Hirayama, M., & Acar, A. (2010). Social conformity and response bias revisited: The influence of" others" on Japanese respondents. *Human Affairs*, *20*(4), 356–363. https://doi.org/10.2478/v10023-010-0036-6

Kormos, C., & Gifford, R. (2014). The validity of self-report measures of proenvironmental behavior: A meta-analytic review. *Journal of Environmental Psychology*, *40*, 359–371. https://doi.org/10.1016/j.jenvp.2014.09.003

[25]Kudryavtsev, A., Krasny, M. E., & Stedman, R. C. (2012). The impact of environmental education on sense of place among urban youth. *Ecosphere*, *3*(4), 29. https://doi.org/10.1890/ES11-00318.1

Leary, M. R., Tipsord, J. M., & Tate, E. B. (2008). Allo-inclusive identity: Incorporating the social and natural worlds into one's sense of self. In H. Wayment, & J. Bauer (Eds.), *Transcending self-interest: Psychological explorations of the quiet ego* (pp. 137–147). Washington, D.C.: American Psychological Association. https://doi.org/10.1037/11771-013

[26]Lee, K. (2009). Gender differences in Hong Kong adolescent consumers' green purchasing behaviour. *Journal of Consumer Marketing*, *26*(2), 87–96. https://doi.org/10.1108/07363760910940456

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P., … Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. *PLoS Medicine*, *6*(7), e1000100. https://doi.org/10.1371/journal.pmed.1000100

Lindenberg, S., & Steg, L. (2007). Normative, gain and hedonic goal frames guiding environmental behaviour. *Journal of Social Issues*, *65*(1), 117–137. https://doi.org/10.1111/j.1540-4560.2007.00499.x

[27]Lokhorst, A. M., Hoon, C., le Rutte, R., & de Snoo, G. (2014). There is an I in nature: The crucial role of the self in nature conservation. *Land Use Policy*, *39*, 121–126. https://doi.org/10.1016/j.landusepol.2014.03.005

[28]Mannetti, L., Pierro, A., & Livi, S. (2004). Recycling: Planned and self-expressive behaviour. *Journal of Environmental Psychology*, *24*(2), 227–236. https://doi.org/10.1016/j.jenvp.2004.01.002

Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology*, *3*(5), 551–558. https://doi.org/10.1037/h0023281

[29]Matsuba, M. K., Pratt, M. W., Norris, J. E., Mohle, E., Alisat, S., & McAdams, D. P. (2012). Environmentalism as a context for expressing identity and generativity: Patterns among activists and uninvolved youth and midlife adults. *Journal of Personality*, *80*(4), 1091–1115. https://doi.org/10.1111/j.1467-6494.2012.00765.x

McCall, G. J., & Simmons, J. L. (1978). *Identities and interactions*. New York: Free Press.

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA statement. *PLoS Medicine*, *6*(6), e1000097. https://doi.org/10.1371/journal.pmed.1000097

[30]Murtagh, N., Gatersleben, B., & Uzzell, D. (2012). Multiple identities and travel mode choice for regular journeys. *Transportation Research Part F: Traffic Psychology & Behaviour*, *15*(5), 514–524. https://doi.org/10.1016/j.trf.2012.05.002

Naess, A. (1973). The shallow and the deep, long-range ecology movement. A Summary. *Inquiry*, *16*(1-4), 95–100. https://doi.org/10.1080/00201747308601682

Nguyen, T. N., Lobo, A., Nguyen, H. L., Phan, T. T. H., & Cao, T. K. (2016). Determinants influencing conservation behaviour: Perceptions of Vietnamese consumers. *Journal of Consumer Behaviour*, *15*(6), 560–570. https://doi.org/10.1002/cb.1594

[31]Nigbur, D., Lyons, E., & Uzzell, D. (2010). Attitudes, norms, identity and environmental behaviour: Using an expanded theory of planned behaviour to predict participation in a kerbside recycling programme. *British Journal of Social Psychology*, *49*(2), 259–284. https://doi.org/10.1348/014466609X449395

Nisbet, E. K., Zelenski, J. M., & Murphy, S. A. (2009). The nature relatedness scale: Linking individuals' connection with nature to environmental concern and behavior. *Environment and Behaviour*, *41*, 715–740. https://doi.org/10.1177/0013916508318748

[32]Nonami, H., & Kato, J. (2009). Effects of community identity and topophilia on environmentally-conscious behaviour. *Shinrigaku Kenkyu: The Japanese Journal of Psychology*, *80*(1), 25–32. https://doi.org/10.4992/jjpsy.80.25

[33]Oh, J. C., & Yoon, S. J. (2014). Theory-based approach to factors affecting ethical consumption. *International Journal of Consumer Studies*, *38*(3), 278–288. https://doi.org/10.1111/ijcs.12092

Orlofsky, J. L., Marcia, J. E., & Lesser, I. M. (1973). Ego identity status and the intimacy versus isolation crisis of young adulthood. *Journal of Personality and Social Psychology*, *27*(2), 211–219. https://doi.org/10.1037/h0034787

34Owen, A., Videras, J., & Wu, S. (2010). Identity and environmentalism: The influence of community characteristics. *Review of Social Economy*, *68*(4), 465–486. https://doi.org/10.1080/00346760903480533

Pearson, K. (1895). Notes on regression and inheritance in the case of two parents. *Proceedings of the Royal Society of London*, *58*, 240–242. Retrieved July 23, 2014, from:. http://www.jstor.org/stable/115794

[35]Pérez, R. C. (2009). Effects of perceived identity based on corporate social responsibility: The role of consumer identification with the company. *Corporate Reputation Review*, *12*(2), 177–191. https://doi.org/10.1057/crr.2009.12

Phillips, T. M. (2009). Does social desirability bias distort results on the ego identity process questionnaire or the identity style inventory? *An International Journal of Theory & Research*, *9*(1), 55–62. https://doi.org/10.1080/15283480802579474

Pronin, E. (2008). How we see ourselves and how we see others. *Science*, *320*(5880), 1177–1180. https://doi.org/10.1126/science.1154199

Proshansky, H. M. (1978). The city and self-identity. *Environment and Behaviour*, *10*(2), 147–169. https://doi.org/10.1177/0013916578102002

Proshansky, H. M., Fabian, A. K., & Kaminoff, R. (1983). Place-identity: Physical world socialization of the self. *Journal of Environmental Psychology*, *3*(1), 57–83. https://doi.org/10.1016/S0272-4944(83)80021-8

Rahimah, A., Khalil, S., Cheng, J. M. S., Tran, M. D., & Panwar, V. (2018). Understanding green purchase behavior through death anxiety and individual social responsibility: Mastery as a moderator. *Journal of Consumer Behaviour*, *17*(5), 477–490. https://doi.org/10.1002/cb.1733

[36]Ramkissoon, H., Graham Smith, L. D., & Weiler, B. (2013). Testing the dimensionality of place attachment and its relationships with place satisfaction and pro-environmental behaviours: A structural equation modelling approach. *Tourism Management*, *36*, 552–566. https://doi.org/10.1016/j.tourman.2012.09.003

[37]Rees, J. H., & Bamberg, S. (2014). Climate protection needs societal change: Determinants of intention to participate in collective climate action. *European Journal of Social Psychology*, *44*(5), 466–473. https://doi.org/10.1002/ejsp.2032

[38]Reese, G., & Kohlmann, F. (2015). Feeling global, acting ethically: Global identification and Fairtrade consumption. *The Journal of Social Psychology*, *155*(2), 98–106. https://doi.org/10.1080/00224545.2014.992850

Rise, J., Sheeran, P., & Hukkelberg, S. (2010). The role of self-identity in the theory of planned behaviour: A meta-analysis. *Journal of Applied Social Psychology*, *40*(5), 1085–1105. https://doi.org/10.1111/j.1559-1816.2010.00611.x

Roof, K., & Oleru, N. (2008). Public health: Seattle and King County's push for the built environment. *Journal of Environmental Health*, *71*(1), 24–27. Retrieved June 15, 2018, from:. http://www.jstor.org/stable/26327656

Roszak, T. (1995). In T. Roszak, M. E. Gomes, & A. D. Kanner (Eds.), *Where psyche meets Gaia. Ecopsychology: Restoring the earth, healing the mind* (pp. 1–20). San Francisco, CA: Sierra Club Books.

[39]Schuitema, G., Anable, J., Skippon, S., & Kinnear, N. (2013). The role of instrumental, hedonic, and symbolic attributes in the intention to adopt electric vehicles. *Transportation Research Part A: Policy & Practice*, *48*, 39–49. https://doi.org/10.1016/j.tra.2012.10.004

Schuitema, G., & De Groot, J. I. (2015). Green consumerism: The influence of product attributes and values on purchasing intentions. *Journal of Consumer Behaviour*, *14*(1), 57–69. https://doi.org/10.1002/cb.1501

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in experimental social psychology* (pp. 1–65). Orlando, FL: Academic Press. https://doi.org/10.1016/s0065-2601(08)60281-6

[40]Shaw, D., & Shiu, E. (2002). An assessment of ethical obligation and self-identity in ethical consumer decision-making: A structural equation modelling approach. *International Journal of Consumer Studies*, *26*(4), 286–293. https://doi.org/10.1046/j.1470-6431.2002.00255.x

[41]Shaw, D., Shiu, E., & Clarke, I. (2000). The contribution of ethical obligation and self-identity to the theory of planned behaviour: An exploration of ethical consumers. *Journal of Marketing Management*, *16*(8), 879–894. https://doi.org/10.1362/026725700784683672

[42]Sparks, P., & Shepherd, R. (1992). Self-Identity and the theory of planned behaviour: Assessing the role of identification with "green consumerism". *Social Psychology Quarterly*, *55*, 388. https://doi.org/10.2307/2786955

Stedman, R. C. (2002). Toward a social psychology of place: Predicting behaviour from place-based cognitions, attitude, and identity. *Environment and Behaviour*, *34*(5), 561–581. https://doi.org/10.1177/0013916502034005001

Steg, L., & Vlek, C. (2009). Encouraging pro-environmental behaviour: An integrative review and research agenda. *Journal of Environmental Psychology*, *29*(3), 309–317. https://doi.org/10.1016/j.jenvp.2008.10.004

[43]Steinheider, B., & Hodapp, V. (1999). Environmental worry: A concept to explain differences in environmentally conscious behaviour? *Zentralblatt für Hygiene und Umweltmedizin*, *202*(2–4), 273–289. https://doi.org/10.1016/S0934-8859(99)80030-3

Stern, P. C. (2000). New environmental theories: Toward a coherent theory of environmentally significant behaviour. *Journal of Social Issues*, *56*(3), 407–424. https://doi.org/10.1111/0022-4537.00175

[44]Stets, J. E., & Biga, C. F. (2003). Bringing identity theory into environmental sociology. *Sociological Theory*, *21*(4), 398–423. https://doi.org/10.1046/j.1467-9558.2003.00196.x

Stets, J. E., & Burke, P. J. (2000). Identity theory and social identity theory. *Social Psychology Quarterly*, *63*(3), 224–237. https://doi.org/10.2307/2695870

Stryker, S., & Burke, P. J. (2000). The past, present, and future of an identity theory. *Social Psychology Quarterly*, *63*(4), 284–297. https://doi.org/10.2307/2695840

[45]Swim, J. K., Zawadzki, S. J., Cundiff, J. L., & Lord, B. (2014). Environmental identity and community support for the preservation of open space. *Human Ecology Review*, *20*(2), 133. https://doi.org/10.22459/her.20.02.2014.07

Tajfel, H. (1979). Human intergroup conflict: Useful and less useful forms of analysis. In M. von Cranach, K. Poppa, W. Lepenies, & D. Ploog (Eds.), *Human ethology: Claims and limits of a new discipline* (pp. 396, 764–422). Cambridge, Paris: Ed. Maison Sciece l'Homme: Cambridge University Press.

Tajfel, H. (1982). Social psychology of intergroup relations. *Annual Review of Psychology*, *33*(1), 1–39. https://doi.org/10.1146/annurev.ps.33.020182.000245

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. *The Social Psychology of Intergroup Relations*, *33*(47), 74. Retrieved

June 15, 2014, from:. https://www.researchgate.net/publication/226768898_An_Integrative_Theory_of_Intergroup_Conflict/references

[46]Tam, K.-P. (2013). Concepts and measures related to connection to nature: Similarities and differences. *Journal of Environmental Psychology*, *34*, 64–78. https://doi.org/10.1016/j.jenvp.2013.01.004

[47]Terry, D. J., Hogg, M. A., & White, K. M. (1999). The theory of planned behaviour: Self-identity, social identity, and group norms. *British Journal of Social Psychology*, *38*(3), 225–244. https://doi.org/10.1348/014466699164149

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford: Basil Blackwell.

United Nations Environment Programme [UNEP]. (2012). Nairobi: UNEP. UK distributor: Stationery Office. Retrieved July 5, 2019, from https://www.unenvironment.org/resources/annual-report/unep-2012-annual-report

[48]van der Werff, E., Steg, L., & Keizer, K. (2013). It is a moral issue: The relationship between environmental self-identity, obligation-based intrinsic motivation and pro-environmental behaviour. *Global Environmental Change*, *23*(5), 1258–1265. https://doi.org/10.1016/j.gloenvcha.2013.07.018

[49]van der Werff, E., Steg, L., & Keizer, K. (2014a). Follow the signal: When past pro-environmental actions signal who, you are. *Journal of Environmental Psychology*, *40*, 273–282. https://doi.org/10.1016/j.jenvp.2014.07.004

[50]van der Werff, E., Steg, L., & Keizer, K. (2014b). I am what I am, by looking past the present the influence of biospheric values and past behaviour on environmental self-identity. *Environment and Behaviour*, *46*(5), 626–657. https://doi.org/10.1177/0013916512475209

Verplanken, B., & Aarts, H. (1999). Habit, attitude, and planned behaviour: Is habit an empty construct or an interesting case of goal-directed automaticity? *European Review of Social Psychology*, *10*(1), 101–134. https://doi.org/10.1080/14792779943000035

[51]White, K. M., & Hyde, M. K. (2012). The role of self-perceptions in the prediction of household recycling behaviour in Australia. *Environment and Behaviour*, *44*(6), 785–799. https://doi.org/10.1177/0013916511408069

[52]White, K. M., Smith, J. R., Terry, D. J., Greenslade, J. H., & McKimmie, B. M. (2009). Social influence in the theory of planned behaviour: The role of descriptive, injunctive, and in-group norms. *British Journal of Social Psychology*, *48*(1), 135–158. https://doi.org/10.1348/014466608X295207

[53]Whitmarsh, L., & O'Neill, S. (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*, 305–314. https://doi.org/10.1016/j.jenvp.2010.01.003

Wood, C., Conner, M., Miles, E., Sandberg, T., Taylor, N., Godin, G., & Sheeran, P. (2015). The impact of asking intention or self-prediction questions on subsequent behaviour: A meta-analysis. *Personality and Social Psychology Review*, *20*(3), 245–268. https://doi.org/10.1177/1088868315592334

World Economic Forum. (2019). Global Risk Report, 14 Edition (Report No. 14). Retrieved May 13, 2019, from http://www3.weforum.org/docs/WEF_Global_Risks_Report_2019.pdfMed

[54]Yazdanpanah, M., & Forouzani, M. (2015). Application of the theory of planned behaviour to predict Iranian students' intention to purchase organic food. *Journal of Cleaner Production*, *107*, 342–352. https://doi.org/10.1016/j.jclepro.2015.02.071

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