frontiers | Frontiers in Sustainability

TYPE Original Research
PUBLISHED 29 August 2023
DOI 10.3389/frsus.2023.1231731

OPEN ACCESS

EDITED BY
Maria Alzira Pimenta Dinis,
Fernando Pessoa University, Portugal

REVIEWED BY
Carla Sofia e Sá Farinha,
New University of Lisbon, Portugal
Marina Kovaleva,
Hamburg University of Applied Sciences, Germany

*CORRESPONDENCE
Verena Bauernschmidt
✉ verena.bauernschmidt@uni-due.de

RECEIVED 30 May 2023
ACCEPTED 11 August 2023
PUBLISHED 29 August 2023

CITATION
Bauernschmidt V, Beitz B and Schröder H (2023) A new generation of consumers? A study on the pro-environmental behavior of the Fridays for Future generation based on the social identity approach.
Front. Sustain. 4:1231731.
doi: 10.3389/frsus.2023.1231731

A new generation of consumers? A study on the pro-environmental behavior of the Fridays for Future generation based on the social identity approach

Verena Bauernschmidt*, Beatrice Beitz and Hendrik Schröder

Faculty of Management and Economics, Universität Duisburg-Essen, Essen, Germany

Especially for the younger generation, climate change is a threat, and therefore, environmental protection and pro-environmental behavior (PEB) are most important. The Fridays for Future movement speaks up for the young generation. Based on the social identity approach, the study is the first to investigate the role of stereotypes related to identification with the movement as a political expression of youth. Using structural equation modeling (n = 543), the study demonstrates that identification is higher when pupils connect the movement with positive stereotypes, aligning with previous research findings for other activists, such as feminists. Whereby environmental concern has an additionally significant but low impact on identification, pro-material value orientation has no effect. Furthermore, the study investigates the relationship between identification with the movement and different types of PEB. The relationship is strongest with public sphere PEB in the form of future participation in a demonstration of the movement. Nevertheless, there is also a positive relationship with private sphere PEB such as nature-compatible actions in everyday life, for example, a meat-free diet and buying an environmentally friendly product. This is partly additionally confirmed through a conjoint analysis also conducted as part of the study. These findings enhance the understanding of the relationship between activism and different types of PEB among pupils and they contribute to closing this research gap. Finally, the implications and limitations of the work are discussed, along with an outlook for future research.

KEYWORDS

pro-environmental behavior, Fridays for Future, social identity, stereotypes, structural equation modeling, conjoint analysis

1. Introduction

There is almost complete scientific consensus that climate change is human-caused and that the consequences, especially weather and climate extremes will continue to increase (Masson-Delmotte et al., 2021). Consequently, there is an urgent need for action, with environmental protection playing a central role (Díaz et al., 2019). It seems that even beyond science, many people have a greater awareness of the climate and environmental crisis, which is partly reflected in a change in behavior toward environmentally protective or environmentally friendly behavior (Vermeir and Verbeke, 2006; European Commission, Directorate-General for Environment, 2021).

According to Steg and Vlek (2009), the term pro-environmental behavior (PEB) is defined as behavior "that harms the environment as little as possible, or even benefits the environment." Such behavior can be further divided into behavior that has a direct impact on the environment, behavior that has an indirect impact, behavior that occurs in the private sphere and behavior that occurs more in the public sphere (Stern et al., 1999; Stern, 2000). Research on PEB in the private sphere with a direct influence, such as the purchase of organic products (e.g., Thøgersen, 2002; Vermeir and Verbeke, 2006; Aprile and Fiorillo, 2023) recycling behavior (e.g., Hopper and Nielsen, 1991; Thøgersen, 1996; Bratt, 1999; Corrado et al., 2022), saving water and energy in the household (e.g., Black et al., 1985; Harland et al., 2007; Hossain et al., 2022), and environmentally friendly mobility (e.g., Hunecke et al., 2001; Harland et al., 2007; de Groot and Steg, 2009; Mundaca et al., 2022), already has a long tradition. Factors influencing environmentally friendly behavior have been studied since the 1970s (Peattie, 2001; Leonidou and Leonidou, 2011; Kirmani and Khan, 2016). In particular, the constructs of the theory of planned behavior (e.g., Terry et al., 1999; Vermeir and Verbeke, 2008; Paul et al., 2016; Canova et al., 2020), norm activation theory (e.g., Black et al., 1985; Hopper and Nielsen, 1991; Bratt, 1999; Thøgersen, 1999; Harland et al., 2007) and the value belief theory (e.g., Stern et al., 1999; Lind et al., 2015) have been and are frequently used to provide explanations. There is also a branch of research that investigates the relationship between different social identities—understood as the part of identity that relates to belonging to social groups—and PEB (Terry et al., 1999; Kim, 2019). For example, in several studies, positive correlations were found between social identities such as ecological or environmentally conscious consumers and the purchase of ecological food, other environmentally friendly products, and fair-trade products (Bartels and Hoogendam, 2010; Bartels and Reinders, 2010, 2016; Bartels and Onwezen, 2014). Whereas, for instance, by not using pesticides in organic products, the production and thus the purchase of such products has a reduced negative impact on the environment, participation in demonstrations can have an indirect positive impact on the environment. Because of the pressure on politicians, for example, laws could be passed that better protect the environment. Therefore, environmental activism can be understood as PEB with an indirect impact on the environment, which takes place in public (Stern et al., 1999; Stern, 2000).

The Fridays for Future movement (FFF movement) can be described as one of the best-known movements in the field of environmental, or more precisely climate activism today. Since the beginning in 2018, school strikes and demonstrations have taken place in over 200 countries (Fridays For Future, 2022), with well over seven million people taking part (Cologna et al., 2021). Several studies have already identified influencing factors and motives regarding participation in school strikes and demonstrations. It could be shown that older people demonstrate out of solidarity, while the younger generation takes to the streets for their own interests (Wahlström et al., 2019; Gardner and Neuber, 2021). Also, feelings such as fear, concern and anger (Wahlström et al., 2019; Gardner and Neuber, 2021), but also hope (Gardner and Neuber, 2021), fun (Cologna et al., 2021), the perceived activism of the social environment (Wallis and Loy, 2021) and political orientation (Cologna et al., 2021; Soliev et al., 2021; Svensson and Wahlström, 2021), as well as social self-efficacy (Cologna et al., 2021; Wallis and Loy, 2021) and efficacy on a collective level (Wallis and Loy, 2021), could be identified as motives and predictors, although the results on efficacy are not clear (Prendergast et al., 2021). However, while protesters have faith in science (Cologna et al., 2021), they express a certain skepticism toward both companies and governments about their ability and willingness to tackle the climate crisis (Wahlström et al., 2019; de Moor et al., 2020; Cologna et al., 2021; Mundaca et al., 2022; Noth and Tonzer, 2022). What is special about this environmental movement, particularly in comparison to earlier environmental movements, is that it was originally a pupils' movement. And even though the supporters are no longer only pupils, the current movement is still remarkably youthful (Cologna et al., 2021; Neuber et al., 2021). But how the movement is perceived by today's pupils as a still important group within the movement has not yet been investigated. Research by Bashir et al. (2013) showed that environmental activists as agents of social change are associated with negative stereotypes. According to Ehrlich (1973, p. 20), stereotypes can be understood as "a set of beliefs and disbeliefs about any group of people." But such a negative perception has far-reaching consequences, as the researchers were able to show that based on the negative stereotypes, the willingness to implement the behavior demanded by the activists decreases (Bashir et al., 2013). Although the direct demands of the FFF movement are addressed to policy makers, a study by Svensson and Wahlström (2021) was able to show that the framing of the FFF movement is also directed toward individual behavior change, so that this could also be affected.

Wallis and Loy (2021) point out that the role of young people on the political activist stage has so far been neglected and that they have been considered only as consumers. But constructs such as consumer empowerment, consumer activism (Shaw et al., 2006) and political consumerism (Copeland, 2014) operationalise and express the fact that purchasing and consumption behavior can have a political component. In this sense, consumption can also be understood as a political act in which the decision for or against purchase and consumption is shaped by political-ethical considerations. Shaw et al. (2006, p. 1051) sum up the core idea with the description "consumption as voting." Nevertheless, so far there has been little research on the extent to which environmentally friendly purchasing and consumption behavior and environmental activism are exactly connected. One of the few exceptions is research by Dono et al. (2010). Based on the ideas of the social identity approach, the authors investigate to what extent one's social identity as an environmentalist positively influences both environmentally friendly purchasing behavior and environmental activism. Hence, a direct connection between social identity and environmentally friendly purchasing behavior and an indirect connection between social identity and environmental activism can be confirmed (Dono et al., 2010).

However, young people's possibilities for action are often limited, or at least perceived to be limited, both in terms of political power (Cammaerts et al., 2014) and in terms of purchasing and consumption behavior. Nevertheless, both aspects are particularly important for young people. On the one hand, they will have to struggle particularly hard with the consequences of the

environmental and climate crisis, so political decisions regarding environmental protection are especially relevant for them (O'Brien et al., 2018). Therefore, the FFF movement can be a way for young people to make their voices heard politically. On the other hand, purchasing and consumption have an identity-creating and an identity-expressing function, especially for young people in a strongly consumption-oriented world (Belk, 1988; Hill, 2011; Ziesemer et al., 2021). Pro-material values can be of significance here, in which great value is placed on the possession of goods. But such materialism tends to be negatively related to environmentally friendly behavior (Helm et al., 2019). Accordingly, for young people who have pro-material values, the FFF movement and other types of environmental activism may be unattractive.

This study aims to contribute to the wider research gap on the interplay between activism and consumption as well as the purchasing behavior of pupils. The FFF movement is at the center of the research, and rather than interviewing demonstrators, as is the case in most research studies (Wahlström et al., 2019; Svensson and Wahlström, 2021), it will interview pupils, regardless of whether they have ever participated in a demonstration.

Specifically, the present study will examine how the FFF movement is perceived by pupils and the role of stereotypes in identification. It will be answered to what extent the two personal factors environmental concerns (Dunlap et al., 2000) and attachment to goods as a pro-material value (Csikszentmihalyi and Halton, 1981) influence the identification. In addition, emphasis will be placed on the extent to which identification with the FFF movement promotes PEB and the extent to which there are differences between PEB in the public and PEB in the private spheres.

To pursue the identified research questions, the social identity approach is first presented, on the basis of which concrete hypotheses are then derived. In a subsequent section, the results of the hypothesis testing are presented and the results, as well as the limitations of the study, are discussed.

2. Theoretical background: the social identity approach

2.1. Social identity theory

The social identity approach (SIA) is composed of social identity theory (SIT) and self-categorization theory (SCT) (Abrams and Hogg, 1990; Turner and Reynolds, 2010), whereby social identity theory, which emerged first, has its origins in minimal group experiments by Tajfel et al. (1971). Despite the fact that in these experiments participants were assigned to groups either at random or on the basis of content-irrelevant criteria, interaction was not possible and people remained anonymous, members of one's own group were favored over the other group when it came to the distribution of amounts of money, for example. Solely the social categorization, even in the absence of competition for limited resources as the predominant explanation at the time, led to a disadvantage of the outgroup (Tajfel et al., 1971). Following the basic assumptions of the social identity theory that emerged from this, individuals have a need to simplify their complex environment. Therefore, they not only categorize their social environment into groups, but also categorize themselves and cognitively assign themselves to a certain social group (Billig and Tajfel, 1973; Tajfel, 1974, 1981a; Tajfel and Turner, 1979). Social groups are defined as "two or more individuals who share a common social identification of themselves" (Brown and Turner, 1981, p. 41). If this group membership is internalized, it becomes part of the self-concept as a social identity. Social identity is understood as "that part of an individual's self-concept which arise from his knowledge of his membership of a social group (or groups) together with the emotional significance attached to that membership" (Tajfel, 1974, p. 69). Individuals aspire to positive self-esteem and a positive social identity. Evaluation of social identity takes place in intergroup comparison with relevant outgroups. Positive comparison for the ingroup and the associated positive distinctiveness then lead to a positively evaluated social identity, which can shape attitudes, perceptions and behavior. According to the authors, there is a continuum of personal and social identity, the poles of which represent ideal–typical extremes in which either individual or group-related aspects are in the foreground (Tajfel, 1978; Tajfel and Turner, 1979). Based on the idea of a continuum, the basic idea can be summarized as follows: "Human beings are neither merely individuals nor group members" (Turner and Reynolds, 2010, p. 13).

2.2. Self-categorization theory

Whereas SIT generally has a stronger focus on intergroup relations and behavior, the focus of SCT is on the psychological processes behind group formation as well as the mechanisms that favor behaviors that are made on the basis of group membership (Turner and Reynolds, 2010, 2012). SCT does not replace SIT but can be understood as a complement, leading to the more complex approach of social identity (Abrams and Hogg, 1990).

Which categorization is the decisive one at a given moment, or which significantly influences thoughts and actions (Turner, 1982, 1985; Turner et al., 1987), is determined by the salience of the categorization, which in turn depends (Turner, 1982, 1985; Turner et al., 1987) on "the perceiver's readiness to use a self-category and the fit of that self-category to the apprehended stimulus reality" (Turner and Reynolds, 2012, p. 405). According to SCT, fit is divided into two types. The first is comparative fit, which refers to the meta-contrast principle, in which (self-)categorization is based on the comparison of stimuli, here understood as persons. Persons are perceived as a social unit if the differences on a relevant comparative dimension are smaller than the differences to the other persons in the comparison. The second type is normative fit, where categorization is based on the fulfillment of stereotypical and normative expectations in relation to the social group (Turner, 1985; Oakes et al., 1991; Turner et al., 1994). Self-stereotyping and the associated process of depersonalization form the basis for group behavior and group phenomena. Depersonalization refers to the perception of the self as an interchangeable category member, whereby the perception of the self as a unique person fades into the background. Stereotypical norms and values are internalized, and group-normative behavior can be the consequence (Turner, 1982, 1985).

Important relationships postulated in the SIA have already been transferred and tested in various areas, e.g., in the customer-company context (e.g., Bhattacharya and Sen, 2003; Ahearne et al., 2005) and in the context of sustainable purchasing and consumption behavior (e.g., Bartels and Hoogendam, 2010; Bartels and Onwezen, 2014). Only a few works apply the theory to the study of political movements (Stryker et al., 2000) and in the interaction between political activism and purchasing behavior (Dono et al., 2010). The present study can also be classified in this area.

3. Hypothesis derivation

3.1. Attitudes and values and identification with the FFF movement

According to Turner (1985), individuals assign themselves and others to social groups such as the FFF movement on the basis of similarities. The individual's own values and norms are compared with those of the group, which are also reflected in perceived stereotypical attributes of the group. Once there is a comparative or normative fit, the individual assigns him/herself to the social group, in this case to that of the FFF movement (Oakes et al., 1991; Hogg and Terry, 2000). Due to the fact that one of the central demands of the movement is aimed at protecting the climate and thus the environment, it can be assumed that individuals who have a high level of environmental concern are more likely to associate themselves with the social group of the FFF movement and to identify with it. If, in contrast, the personality is characterized by a high attachment to goods, in which one's identity is strongly determined and expressed by material goods (Csikszentmihalyi and Halton, 1981), a low fit with the FFF movement can be assumed. Consequently, the first two hypotheses can be derived from the above:

H_1: The higher the pupils' environmental concern, the more they identify with the FFF movement.

H_2: The more attached to goods the pupils are, the less they identify with the FFF movement.

3.2. Stereotypes and identification with the FFF movement

When stereotypes are held by many people within a social group, they are called social stereotypes (Tajfel, 1981b). Social therefore refers to the social context in which stereotypes emerge and exert influence, whereby stereotypes, according to Haslam et al. (1992), are not rigid but context related. In striving for a positive social identity that has a positive impact on self-esteem, the social function of stereotypes is important. Stereotypes can contribute to linking the social group with a positive value and thus positively differentiate the ingroup from other groups (Tajfel, 1981a,b; Brewer et al., 1993). In the case of the FFF movement, there is a social group to which individuals voluntarily assign themselves. Andrews (1991) emphasizes the importance of distinguishing between voluntary and involuntary group affiliations. While biological sex assigned at birth is an involuntary assignment, membership in a social group such as the FFF movement is voluntary "because people belong to them through choice" (Andrews, 1991, p. 27). It can be assumed that individuals feel a voluntary affiliation with groups only if this group affiliation contributes to a positive social identity. However, the strength of social identification can also vary considerably here (Ashforth and Mael, 1989). It can be assumed that the higher the number of generally positive stereotypes that pupils hold about the movement, the higher the identification, because positive stereotypes about the movement enable a positive social identity. It has already been possible to empirically confirm the positive correlation between positive stereotypes about a social group and identification with it in the work context in a study by Bergami and Bagozzi (2000). Furthermore, an experimental study on stereotypes of feminists found that positive stereotypes favor identification as a feminist (Roy et al., 2007) thus confirming the general link between stereotypes and identification. Following the SIA and the research cited, the third hypothesis is:

H_3: The higher the number of stereotypes held by pupils, which generally have positive connotations, the stronger the identification with the movement.

Through various minimal group experiments, it could be shown that a sole categorization into a group can lead to the favoring of one's own group over the outgroup. There have been numerous studies on this so-called mere categorization effect, and the effect has been largely confirmed (Tajfel et al., 1971; Billig and Tajfel, 1973; Brewer and Silver, 1978). Due to the fact that the experiments do not involve natural but purely random and artificial groups, it can be assumed that the level of identification with the groups is low and plays no role or only a subordinate one (Spears et al., 1997). Subsequent studies have investigated the connection between social identification and ingroup bias or ethnocentrism. In this respect, the studies examined both the behavior toward the ingroup and the social perception and evaluation of the ingroup as ingroup bias (Turner, 1978, 1982; Ellemers et al., 1999). Among others, studies by Ellemers et al. (1997) and Castano et al. (2002) found that strong social identification favors the strategy of describing and perceiving one's own group as particularly advantageous. Also here, the motive behind this is the preservation and enhancement of positive social identity and thus the preservation and enhancement of self-esteem (Tajfel and Turner, 1979). A study by Masson et al. (2016) was able to show empirically that this connection exists even without the often-studied phenomenon of identity threat. Consequently, this leads to the fourth hypothesis:

H_4: The more strongly pupils identify with the movement, the more positively they generally evaluate stereotypes with negative connotations.

3.3. Identification with the movement and resulting behavioral consequences

According to the SIA, the behavior of individuals falls on a continuum between behavior related to personal identity and behavior related to social identity (Turner, 1982; Veenstra and Haslam, 2000). The latter is the basis for group behavior (Turner,

1982; Spears et al., 1997). Pro-social behavior toward other group members (Simon et al., 2000), financial support for the institution with which one identifies (Mael and Ashforth, 1992), but also participation in collective actions (Kelly and Kelly, 1994; Veenstra and Haslam, 2000) can be classified here and have already been studied. Veenstra and Haslam's (2000) study showed that in a trade union context, highly identified individuals are more likely to participate in demonstrations. Such collective actions, through which the values and rights of the group are stood up for, are an expression of social identity.

However, it should be noted that the effect is also possible in the opposite direction: participation in demonstrations increases identification, and norms and values become evident through prototypical members participating in the demonstration. A recognizable prototype facilitates and increases identification. A study by de Weerd and Klandermans (1999) examined the direction of the effect. It was possible to establish that participation in demonstrations is a stronger expression of a high level of identification than the fact that identification is reinforced through participation. Based on this research result, the fifth hypothesis can be formulated as follows:

H_5: The more that pupils identify with the FFF movement, the more likely they are to participate in a demonstration or school strike in the future.

If pupils identify with the movement, they internalize the stereotypical values and norms of the movement. In the course of depersonalization, personal characteristics recede into the background and social identity is brought to the foreground. As a consequence, individuals increasingly behave in a prototypical manner (Turner, 1982, 1985). The aforementioned study by Dono et al. (2010) was able to confirm the positive connection between a social identity as an environmentalist and environmentally friendly purchasing behavior. Further research contributions, such as those by Terry et al. (1999), Diego et al. (2016), or Kim (2019), were able to show not only the connection in relation to purchasing behavior but also the connection to nature-friendly behavior in everyday life, for example recycling behavior and the use of environmentally friendly means of transport.

Even if the direct demands of the FFF movement are addressed to politics, a study by Svensson and Wahlström (2021) was able to show that the framing of the FFF movement also goes toward individual behavioral changes. Accordingly, it can be assumed that the perceived values and norms of the movement also relate to the behavior of individuals in everyday life. This leads to three further research hypotheses:

H_6: The stronger the identification with the FFF movement, the more pronounced are nature-compatible actions in everyday life.

H_7: The stronger the identification with the FFF movement, the higher the probability of buying a sustainable product with the next purchase.

H_8: The stronger the identification with the FFF movement, the higher the preference for sustainable product characteristics.

Figure 1 provides an overview of the hypotheses. The presented hypotheses 1–7 are tested by means of a structural equation model. Hypothesis 8 is based on two conjoint analyses in which a pair of jeans and lemonade were used as stimuli. The following section presents the methodological procedure and the operationalisation of the constructs.

4. Materials and methods

4.1. Pilot study: study design, sample and measurements

A pilot study was conducted in November 2019. The survey took place using tablets on a university campus and online. A total of 202 people aged 15–36 were surveyed. The preliminary study aimed to identify stereotypical attributes of the FFF movement and to test the reliability of the operationalisation of social identity. Based on the pilot study, 22 stereotypical attributes were selected, which are listed in Supplementary Table S1. Based on Mael and Ashforth's (1992) operationalisation of social identity, which was adapted to the FFF movement, the survey showed very good reliability, with a Cronbach's alpha of 0.90, and was therefore also used in the main study.

4.2. Main study: study design and sample

The main study was conducted at seven different schools in Germany between November 2019 and January 2020. Among the seven secondary schools are three grammar schools, a type of school that can lead to the Abitur, the highest school-leaving qualification in Germany, upon completion. Two other schools are comprehensive schools. The comprehensive school is a type of school where all school-leaving qualifications common in Germany can be obtained, such as Hauptschulabschluss (certificate of secondary education), Realschulabschluss (secondary school certificate), Fachhochschulreife (advanced technical college certificate) and Abitur. Two schools are vocational colleges. This type of school is a dual system in which pupils can acquire both a general qualification such as Hauptschulabschluss or Fachhochschulreife and a vocational qualification such as the state-certified nursery nurse. The school types of grammar school, comprehensive school and vocational college were chosen because these school types ensure that pupils with different educational pathways were surveyed. While the comprehensive school and the vocational college were chosen in particular to obtain a sufficient number of pupils who were aiming for qualifications other than the Abitur, the grammar school was chosen in particular to check whether environmental concerns and identification are more pronounced at higher levels of education. No significant differences between school types were found.

A total of 570 pupils were interviewed, 36.8% of whom attended a vocational college, 32.5% a grammar school and 30.7% a comprehensive school. The average age of the pupils at the time of the survey was 17 years (SD: 2.35), with 45.1% of the respondents between 14 and 16 years old, 35.9% between 17 and 18 years old and only 19.0% 19 years old and older. Of the respondents, 47.2% were

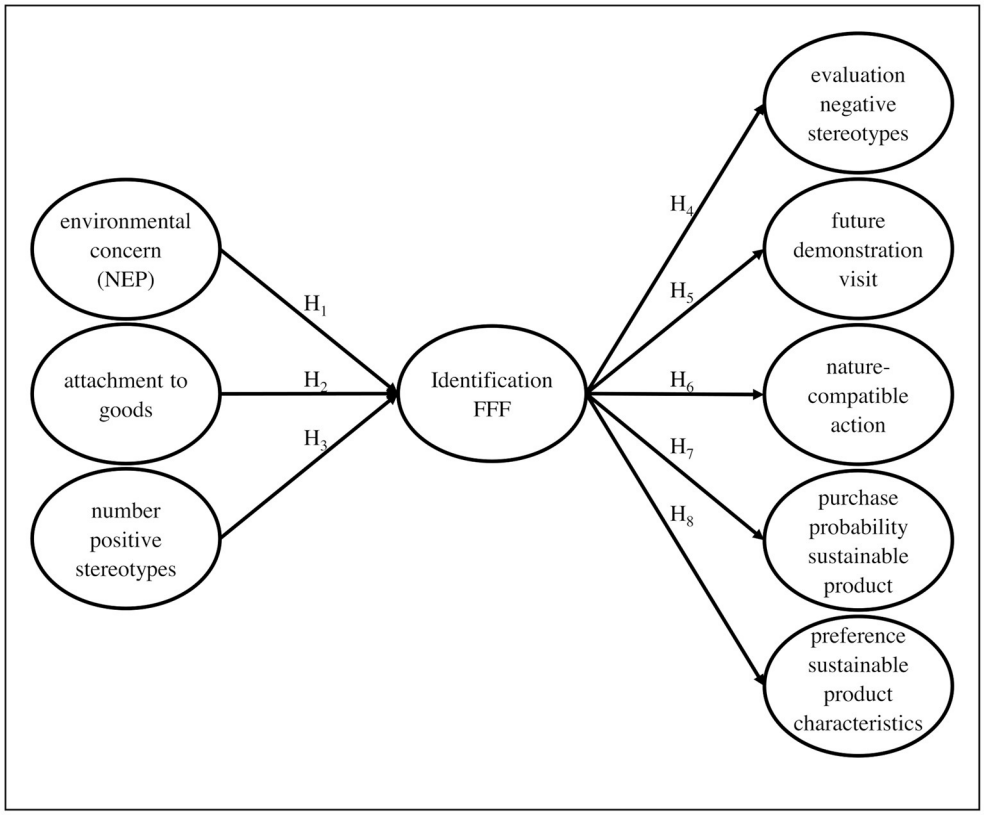

FIGURE 1
Theoretical model and hypotheses. NEP, new ecological paradigm.

female, 50.2% male and 2.6% diverse. The survey was conducted on site using tablets.

4.3. Main study: measurements

The main focus of the study is on identification with the FFF movement. Analogous to the pilot study, social identity was operationalised by a six-item scale based on Mael and Ashforth (1992). The items of the scale were adapted to the FFF movement. As examples, the following two items can be mentioned: "If someone criticizes the Fridays for Future movement, I feel it is a personal slight," "When I talk about the Fridays for Future movement, I usually talk about 'we' instead of 'they'." Agreement with the respective items was reported with a 7-point scale from (1) "Do not agree at all" to (7) "Fully agree."

As a further important component of this research study, stereotypical attributes of the movement were measured using a checklist analogous to Katz and Braly (1933). In a first step, all characteristics that are typical of the FFF movement were to be ticked off. In a second step, the five most typical characteristics were to be ticked off. The checklist consists of 22 characteristics that could be identified as stereotypical attributes in the pilot study. Efforts were made to have a relatively balanced number of attributes with positive and negative connotations. Examples of attributes with generally positive connotations are "demonstrative," "responsible," and "environmentally protective." "Dramatizing" and "contradictory" are examples of negative stereotypical attributes. Subsequently, the five most typical characteristics selected by the respondents were rated on a scale of 7 from −3 ("very negative") to +3 ("very positive"). Accordingly, stereotypes whose mean value is >0 are generally considered to have a positive connotation.

The New Ecological Paradigm scale (NEP) by Dunlap et al. (2000) was used to measure environmental concern. A German version was reviewed with regard to reliability and validity by Schleyer-Lindenmann et al. (2018). This version of the scale with items such as "People are severely abusing the environment" or "If things continue as they are, we will soon experience a major environmental catastrophe" was used in the present study. Every second item is reverse coded. It is a 5-point scale with the poles 1 ("Strongly disagree") and 5 ("Strongly agree").

A pro-material value orientation among individuals was also recorded, in which material goods, especially prestigious goods, strongly shape identity and the consumption of such goods can be understood as self-expression. The scale for attachment to goods consists of 10 items and contains phrases such as "I like to surround myself with beautiful, valuable things" and "I often think about how nice it would be if I could afford more luxuries" (Scherhorn et al., 1990). Agreement is reported using a 7-point scale.

To record sustainable behavior in the pupils' everyday life, the nature-compatible action scale by Scherhorn et al. (1990) was

used. The scale indicates how often certain behaviors, such as the use of refillable packaging or the economical use of water, are practiced in everyday life. However, in the current study some items were replaced or not included, as they are not suitable for asking pupils about sustainable actions. For example, a question on the use of degradable cleaning products was changed to a question on the purchase of personal care products based on environmentally friendly ingredients. In contrast, questions regarding the choice of transport ("Do not use the car for short journeys" and "Use public transport") were not used for hypothesis testing, as younger pupils in particular are often unable to independently exercise discretion about the means of transport. Instead, a few items were included, such as "I abstain from meat," which are more appropriate for today's times and possible behavior of young people. The answers are indicated on a 5-point scale, with the scale points "always," "almost always," "partly," "rarely," and "never." Nature-compatible action is specified as reflective measurement models, like identification with the FFF movement and the NEP scale.

In addition to measuring nature-compatible actions in everyday life, the survey also asked about the likelihood of purchasing a sustainable product at the supermarket or a sustainably produced item of clothing upon the next shopping opportunity. The pupils could give their answers on a 7-point scale with the poles 1 ("Very unlikely") and 7 ("Very likely"). Additionally, a question on likelihood to take part in a future movement-related demonstration or school strike was recorded by means of single-item measurements. The use of single-item measurements is still controversial. Advantages of using single-item measurements are, for example, a shorter questionnaire length, which can have a positive effect on dropout rates, respondent motivation, the quality of answers and the avoidance of problems regarding multi-dimensionality. The main arguments against the use of single-item measurement and thus arguing for the use of multiple-item scales can be roughly summarized as reliability and validity problems (Petrescu, 2013). Bergkvist and Rossiter (2009) investigated validity differences between single-item and multi-item measures and were able to show "that tailor-made single-item measures of A_{Ad}, A_{Brand} and PI_{Brand} are as predictively valid as traditional multiple-item measures of these doubly concrete constructs." The results regarding purchase intention (PI_{Brand}) are obviously of particular importance for this study. Petrescu (2013) and other authors such as Hair et al. (2019) conclude that single-item measures can be used when the complexity of the construct is low and the meaning is easy to understand. The two constructs purchase intention and future participation in demonstrations or school strikes, which here were operationalised as single-item measurements, are constructs with low complexity. The section on the analysis of the measurement models describes the implementation of the single-item measurements in the structural equation model used. All the measurement items are listed in Supplementary Table S2.

To obtain a more comprehensive picture of the pupils' purchasing preferences with regard to sustainable product characteristics, a conjoint analysis was also made using one choice set each for a high-priced product (jeans) and an everyday product (lemonade). The conjoint analysis represents a realistic decision model, since not only are individual characteristics queried but products are evaluated in their entirety and the importance of characteristics must be weighed against each other, similar to actual purchase decisions (Backhaus et al., 2018). These types of products were chosen because most people, regardless of age, has purchasing experience with them. Participants were randomly assigned to one of the two sets (jeans: $n = 268$; lemonade $n = 302$) to limit the time and cognitive load of the participants. Each product set included a choice of four product attributes. In the case of lemonade, these are: type of bottle (plastic disposable, plastic reusable, glass reusable), brand (popular, small and independent, none), seal (organic seal, product of the year, no seal) and price (under € 0.70, € 0.71–1.50, more than € 1.50). The product attributes for jeans are: style (fashionable, cozy, classic), brand (well-known brand, small and independent, none), other attributes (organic cotton, no sweatshops, 100% cotton) and price (under € 50, € 51–80, more than € 80; see Table 2). By using an orthogonal design, the full profile was reduced from 27 to nine alternatives each. Participants were presented with cards with the respective characteristics for which they could express their preference for purchasing the product on a scale from 1 ("very unlikely") to 7 ("very likely").

To determine relevant attributes for jeans, four attributes were selected in line with Jegethesan et al. (2012), who identified the ethical treatment of workers as the most important ethical concern, as well as a higher price as an indirect indicator of ethical production. Thus, for organic cotton jeans, no sweatshops and price can be used as ethical product characteristics.

In the case of lemonade, the product features plastic or reusable glass and the organic label represent the sustainable options. The full questionnaire is available as Supplementary material.

5. Results

5.1. Descriptive results

The FFF movement seems to be widely known. Of the pupils surveyed, 96.8% had heard of the movement, and 45.8% of those had also participated in at least one demonstration or school strike. It should be noted, however, that 78.3% of the respondents who had already participated in a demonstration or a school strike took part together with the class. Participation was organized by the teaching staff in 71.2% of cases. In some cases, it was also reported that participation was strongly supported by the school administration.

Persons who know the FFF movement most often named "demonstrating" (74.8%), "protecting the environment" (67.2%) and "political" (61.4%) as one of the five most typical characteristics of the movement. Among the most frequently mentioned characteristics were predominantly attributes that were positively evaluated, so that a relatively positive image of the movement can be assumed (for details, see Supplementary material S1).

Despite the relatively positive image of the movement, the identification with the movement among the pupils surveyed can be described as relatively low, with a mean value of 2.52 (SD: 1.23; 7-point scale). On the contrary, environmental concern (M: 3.59, SD: 0.58; 5-point scale) and attachment to goods (M: 4.16, SD: 1.02; 7-point scale) were strongly pronounced. The differences between the different types of school were very small and not significant.

TABLE 1 Reliability and validity values of the measurement model.

Construct	Scale items	Cronbachs α	IR	CR	AVE
		Cut-off value (Nunnally, 1978): ≥0.7	Cut-off value (Bagozzi and Baumgartner, 1994): ≥0.4	Cut-off value (Bagozzi and Yi, 1988) ≥0.6	Cut-off value (Fornell and Larcker, 1981) ≥0.5
NEP	NEP 1	0.80	0.22	0.82	0.31
	NEP 2		0.31		
	NEP 3		0.49		
	NEP 4		0.26		
	NEP 5[a]		0.17		
	NEP 6		0.19		
	NEP 7[a]		0.23		
	NEP 8[a]		0.31		
	NEP 9		0.40		
	NEP 10		0.55		
ATG	ATG 1	0.78	0.42	0.78	0.36
	ATG 2		0.60		
	ATG 3		0.18		
	ATG 4		0.58		
	ATG 5		0.21		
	ATG 6		0.16		
	ATG 7		0.34		
ID FFF	ID FFF 1	0.81	0.42	0.81	0.51
	ID FFF 2		0.44		
	ID FFF 3		0.60		
	ID FFF 4		0.59		
NCA	NCA1	0.79	0.24	0.80	0.33
	NCA2		0.33		
	NCA3		0.22		
	NCA4		0.46		
	NCA5		0.32		
	NCA6		0.36		
	NCA7		0.49		
	NCA8		0.25		

IR, indicator reliability; CR, composite reliability; AVE, average variance extracted.
[a]Originally reverse coded; reversed so that the direction of all items is the same.

5.2. Result of the structural equation model

To test the derived hypotheses, a structural equation model was used, as this allows simultaneous observation and verification of several relationships using latent constructs and taking measurement errors into account. Here, the two-step modeling approach was followed. In this approach first the measurement model is examined and, if necessary, adjusted. Subsequently, the structural model and thus the relationship of the constructs to each other as well as the fit of the model are examined (Anderson and Gerbing, 1988). For this purpose, the programme analysis of moment structure (AMOS) was used. On the basis of the Mahalanobis distance and plausibility considerations, nine cases were identified as outliers and eliminated (Weiber and Mühlhaus, 2014; Hair et al., 2019). In addition, only persons who know the movement are part of the used dataset. After elimination, the data set comprised 543 cases and can thus be described as sufficiently large (Hair et al., 2019). For common estimation methods, such as the maximum likelihood method, multivariate normality is assumed. On the basis of the proposed threshold values of the skewness and kurtosis coefficients by West et al. (2000), there was no substantial deviation from the univariate normal distribution

TABLE 2 Attributes, characteristics, part-worth utility values and importance of the conjoint analysis.

Product	Attribute	Characteristics	Part-worth utility values	Pearson correlation with ID FFF	Importance	Pearson correlation with ID FFF
Jeans	Style	Fashionable	0.16	0.002	12.33	0.12
		Cozy	0.03	−0.08		
		Classic	−0.19	0.08		
	Brand	Well–known brand	0.30	−0.03	17.23	−0.46
		Small and independent	−0.13	0.07		
		None	−0.18	−0.03		
	Others	Organic cotton	−0.13	0.08	11.74	−0.87
		No sweatshops	0.20	0.09		
		100 % cotton	−0.07	−0.17**		
	Price***	Under € 50	−0.81		58.70	−0.71
		€ 51–80	−0.03	0.10*		
		More than € 80	0.83			
Lemonade	Type of bottle	Plastic disposable	−0.46	−0.10*	30.36	0.16**
		Plastic reusable	0.09	−0.16**		
		Glass reusable	0.38	0.19**		
	Brand	Popular	0.27	−0.05	14.99	−0.63
		Small and independent	−0.12	0.08		
		None	−0.15	−0.02		
	Seal	Organic seal	−0.01	0.14*	7.39	−0.19*
		Product of the year	0.11	−0.14*		
		No seal	−0.10	−0.01		
	Price+	Under € 0.70	−0.65		27.64	−0.05
		€ 0.71–1.50	−1.31	0.03		
		More than € 1.50	−1.96			

*$p \leq 0.05$.
**$p \leq 0.01$.
***$p \leq 0.001$.
+Price was treated as linear factor and therefore has a single correlation coefficient.

as a necessary condition for multivariate normality (Weiber and Mühlhaus, 2014). However, there is no multivariate normality according to Mardia's test. Because of this, the bootstrapping method was used.

5.2.1. Analysis of the measurement model

The reliability of the measurement scales was evaluated by means of Cronbach's alpha and the corrected item-scale correlation (Bühner, 2021), which are also referred to as first-generation reliability criteria (Fornell, 1982). Particularly with the construct NEP, it was important to conduct an exploratory as well as a confirmatory factor analysis to verify whether there was unidimensionality or multidimensionality. According to Dunlap et al. (2000) the revised NEP scale used here can theoretically be divided into five factors. However, those authors stress that the presence of unidimensionality or multidimensionality, and here the number of factors, can differ greatly depending on the sample and must be checked individually. Similar to a study on the German translation of the scale, a five-factor solution cannot be expected (Schleyer-Lindenmann et al., 2018). According to the exploratory factor analysis, three-, two- or one-dimensional solutions are justifiable, depending on how many items are removed due to reliability tests. Using confirmatory factor analysis, the fit of the measurement model was compared with one of the three outlined possibilities each with 15 items and a reduced number of items. The measurement model with 10 items as a one-dimensional solution fit the data best.

The squared correlations of the indicators with the underlying factor provide information about the indicator reliability. Other reliability criteria and also criteria of the second generation are the composite reliability, as an expression of the common variance of all items of a construct; the average variance extracted (AVE), as a proportion of the variance of the indicators belonging to a construct that is explained by the underlying factor; and the (significance of the) factor loadings. To verify discriminant validity, as a partial aspect of construct validity, the Fornell-Larcker criterion was used,

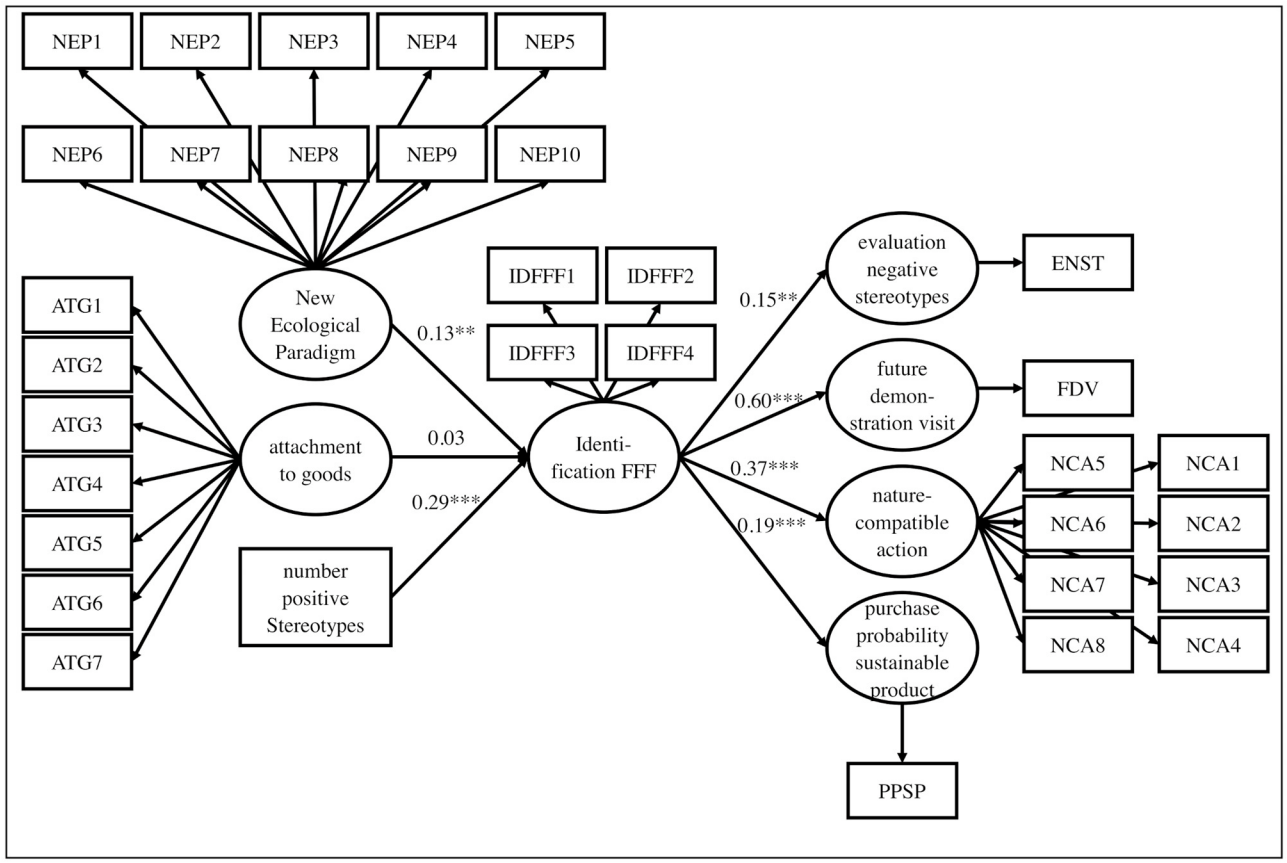

FIGURE 2
Structural equation model with path coefficients. Error terms are not displayed. $^{**}p \leq 0.01$, $^{***}p \leq 0.001$; latent variables are represented by elliptical shapes, observed variables by rectangular shape.

in which the AVE for a factor must be greater than any squared correlation of this construct with another construct (Homburg and Baumgartner, 1995; Weiber and Mühlhaus, 2014; Hair et al., 2019). Supplementary Table S2 shows the elimination of items due to low goodness of measurement. Important resulting reliability and validity values with the threshold values used after elimination can be seen in Table 1 (see Supplementary material S3 for additional reliability and validity values). The measurement models of the four constructs NEP, attachment to goods, identification with the FFF movement and nature-compatible action showed good values with regard to the criteria of the first generation. All constructs showed good composite reliability and the Fornell-Larcker criterion was also fulfilled for all of them. However, only the construct of identification with the FFF movement exceeded the threshold for indicator reliability on each item and for the AVE.

The number of positive stereotypes was integrated into the model as a manifest variable. The integration of single-item measures of purchase probability and future participation in a demonstration or school strike was based on the recommendations of Petrescu (2013) and other research colleagues such as Jöreskog and Sörbom (1982). The parameter λ was fixed relatively conservatively at 0.95 * the variance of the indicator. The error variance was fixed as follows: variance of the indicator * (1 – estimated scale reliability). If no adequate estimate of the reliability is possible, for example, by relying on other studies, as in the present case, 0.85 can be assumed as a conservative value for the estimated scale reliability.

5.2.2. Analysis of the structural model

After the assessment and adjustment of the measurement models, the structural equation model contained the items shown in Figure 2.

To assess the global model quality, the absolute fit measures (normed) χ^2, RMSEA and SRMR were used. According to these values [$\chi^2 = 1{,}158.24$; df = 493; norm. $\chi^2 = 2.35 < 2.50$ according to Homburg and Baumgartner (1995); RMSEA = $0.05 \leq 0.05$ as a good fit according to Browne and Cudeck (1992); SRMR = $0.08 \leq 0.08$ as an acceptable fit according to Bühner (2021)] one can speak of an acceptable overall fit. In contrast, the incremental fit indices CFI and TLI did not exceed the often required value of 0.90 (CFI = 0.85; TLI = 0.84). Moreover, the path coefficient for H_2 was not significant ($\gamma = 0.03$, $p = 0.49$). The assumption that there is a negative relationship between attachment to goods and identification must therefore be rejected. All other path coefficients were significant, so that H_1 and H_3- H_7 can be retained (H_1: $\gamma = 0.13$, $p = 0.009$; H_3: $\gamma = 0.29$, $p < 0.001$; H_4: $\gamma = 0.15$, $p = 0.004$; H_5: $\gamma = 0.60$, $p < 0.001$; H_6: $\gamma = 0.37$, $p < 0.001$; H_7: $\gamma =$

0.19, $p < 0.001$). Thus, environmental concern and the number of positive stereotypes held affect identification positively. The latter, in turn, showed a positive influence on the evaluation of negative stereotypes, a future visit to a demonstration, environmentally compatible actions and the probability of purchasing a sustainable product with the next purchase. However, there is a low effect size for H_1, H_4, and H_7.

5.3. Results of the conjoint analysis

Table 2 shows the part-worth utility values for each product attribute and the estimated relative importance of each attribute.

H8 postulates a correlation between preferences for sustainable product characteristics in terms of part-worth utility values and identification with the FFF movement. The respective relationships were examined by means of a correlation analysis using SPSS (Statistical Package for the Social Sciences). The sustainable characteristics for jeans were organic cotton and "no sweatshops." These characteristics were part of the attribute "other characteristics." The correlations between identification with the FFF movement and the relative importance for the characteristic "no sweatshops" and "organic cotton" were not significant. The positive significant correlation between the part-worth utility values for the price of the jeans as the only linear factor indicated a weak but significant correlation between preference for higher-priced jeans and identification with the FFF movement ($r = 0.10$, $p = 0.05$). In the case of lemonade, the type of bottle and the presence of an organic seal represented the possible sustainable product characteristics. The results showed that FFF-identified people attach a higher importance to the type of bottle ($r = 0.16$; $p = 0.003$). The part-worth utility values showed that they preferred reusable glass bottles more than those who are less identified with FFF ($r = 0.19$; $p = 0.001$). With regard to the seal, FFF-identified people more often preferred an organic seal ($r = 0.14$; $p = 0.01$). Overall, the results confirmed H_8 with regard to lemonade but not with regard to jeans.

6. Discussion

6.1. General discussion of the results

Particularly for young people, effective environmental protection is of great importance, as they will feel the negative effects of the environmental and climate crisis most strongly (O'Brien et al., 2018). The FFF movement represents the concerns of this young generation and demands compliance with the global 1.5 degree target (Sommer et al., 2019; Fridays For Future, 2022), which is why research into identification with the movement was a central component of this study. By means of a structural equation model, it was confirmed that the number of positively held stereotypes has a positive influence on identification with the movement (H_3). Moreover, the present study was able to show that an ingroup bias occurred in the sense that stereotypes with generally negative connotations associated with the movement were evaluated more positively when there was a stronger identification with the movement (H_4). The study joins a growing body of research on stereotypical perceptions of environmental activists and other agents of social change such as feminists and the consequences of stereotypical perceptions (Roy et al., 2007; Bashir et al., 2013; Castro et al., 2016; Ratliff et al., 2017). Even though some research on the FFF movement already exists (Cologna et al., 2021; Neuber et al., 2021; Svensson and Wahlström, 2021; Wallis and Loy, 2021), there has been no research on the stereotypical perception of the movement in general and particularly among pupils.

Besides holding positive stereotypes, the study could confirm environmental concern as an influencing factor regarding the identification with the FFF movement (H_1). Overall the significant positive relationship is consistent with the findings of Gatersleben et al. (2014). Here the correlation between environmental concern, again measured by the NEP scale, and an environmental identity is strong. In our study, only a weak relationship was found. A possible explanation could be that, compared to an environmental identity, the political-activist aspect plays an even greater role in identification with the FFF movement than does environmental concern. The rejection of H_2, which postulated a negative relationship between goods relatedness and identification with the movement, corresponds with the findings of Dermody et al. (2015). No significant relationship could be found in the study between materialistic values and an environmentally friendly identity in the UK, as a representative Western country. Also here, the explanation could be analogous to H_1, that political-activist aspects and especially the view that something has to be changed structurally have a greater importance.

Furthermore, in line with the research of Dono et al. (2010) which focuses on social identity as an environmental activist, a relationship between social identity and PEB was confirmed. Also consistent with a meta-analysis by Schulte et al. (2020), the relationship was stronger for public-sphere PEB than for private-sphere PEB: In the current study, the strongest effect was related to the self-reported probability of participating in a demonstration of the movement in the future (H_5), followed by acting in a nature-friendly way in everyday life (H_6). However, the effect on the self-reported probability of buying an environmentally friendly product in the next shopping trip was significant, but small (H_7). Conjoint analysis results also showed positive correlations between preference for sustainable product characteristics and identification with the movement, which was expressed in particular for the low-priced product lemonade through preference for a sustainable reusable glass bottle. For jeans, there was no clear preference for sustainable product characteristics. Nevertheless, in the case of jeans, there was a positive correlation between identification with the FFF movement and the preference for a higher price, which, according to Jegethesan et al. (2012) is interpreted by young people as an indirect indicator of ethical production (H_8). Our results that identification with the FFF movement had a generally positive influence on environmentally friendly purchasing and consumption behavior coincide with the conclusions that the framing of the movement's demands, especially among young activists of the movement, also leads to individual behavioral changes.

6.2. Limitations

The findings of this study have to be seen in light of some limitations. The sample selection might be a limitation of the study, as it can be inferred that teachers who agreed to participate in the survey with their classes considered the contents of the survey important and also transmitted this importance to their pupils, so that the results might be biased. However, a comparison between the average NEP expression in the present study (*M*: 3.51; SD: 0.53) and a 2014 study by Gatersleben et al. (2014) (*M*: 3.69; SD: 0.52) does not indicate a generally higher environmental concern among the surveyed pupils. The average identification with the movement (*M*: 2.52; SD: 1.23) was also not higher than, for example, in an online-access subpanel of a study by Wallis and Loy (2021) (*M*: 2.90; SD: 1.15). The identification was even lower. In addition, the proportion of vocational colleges in the sample (36.8%) was larger than their share of the Federal Republic of Germany's school system, but these schools represent a broad range of schooling from low to high German qualifications. Another limitation is the operationalisation of the constructs and the associated low goodness of the measurement models in some cases. Of particular note here are the indicator reliability and the AVE for the constructs NEP, attachment to goods and nature-compatible action. The use of scales specifically adapted for adolescents is strongly recommended. Moreover, the incremental fit indices of the model in the current case did not exceed the threshold values. Relevant influencing factors, discussed in Section 7.2, need to be integrated into future models and are to be explored further. Additionally, the used measurement of stereotypes can be critically questioned. The questioning of explicit stereotypes, here according to Katz and Braly (1933) already has a long tradition. Nevertheless, recent research contributions underline the importance of implicit assumptions about environmental activists on pro-environmental behavior (Brough et al., 2016; Ratliff et al., 2017). The fact that no actual behavior but only self-reported behavior was investigated constitutes a further limitation. With the implementation of a conjoint analysis, an attempt was made to approach a decision-making situation that was as realistic as possible. However, there is also room for improvement in terms of operationalisation, as in the current study, with regard to the choice of jeans, the pupils had to decide between two sustainable characteristics, "organic cotton" and "no sweatshops," within a single attribute. Future studies should record only one sustainable characteristic per attribute.

7. Conclusion

7.1. Implications

This work contributes to transferring the social identity approach in the field of social movements and environmental activism and therefore, it contributes through its theoretical assumptions to the understanding of the FFF movement as a social movement. One important theoretical implication in line with the social identity approach is that stereotypes are of special importance and that the assumption of an ingroup bias (Turner, 1978, 1982; Ellemers et al., 1997, 1999; Castano et al., 2002) can be confirmed in this field and it does exist even without direct identity threat. The confirmed importance of stereotypes also has practical implications because the movement and its political demands were and still are controversially discussed in public, which can be assumed to affect social stereotypes and indirectly—through social identification—pupils' environmentally friendly behaviors.

The interplay between social identity and group-conform behavior based on the social identity approach is well-studied and confirmed in relevant fields such as organic consumption (Bartels and Reinders, 2010). The recent study contributes to the rarely existing empirical investigations of the interplay between environmental activism and individual environmentally friendly behavior in general (Dono et al., 2010) and particularly regarding young people (Perera et al., 2018), who are mostly not yet allowed to vote and who will be able to exploit fully their consumption and purchasing possibilities in the future. Among the surveyed pupils, there is a group that identifies with the FFF activists' goals or sees themselves as such and joint protest. Even though the number of pupils who identify (strongly) with the movement is only moderate to small, it is remarkable that very young people are already interested in environmental issues and are engaging in environmentally friendly consumption and purchasing behaviors, so that the term "consuming as voting" (Shaw et al., 2006) comes to mind. The confirmed relationship between identification and collective actions as well as the weaker relationship between identification and PEB on the individual level has practical implications: it can be assumed, that companies, policy makers and society will have to deal with even more strongly in the future a part of society that is young, demands for political commitment regarding climate and environmental protection and consumes in consideration of environmental aspects.

7.2. Future directions

In order to fully understand pupils' identification with the FFF movement, more research is needed on the influencing factors. In this context, it may be important to explore the political dimension as well as pupils' sense of responsibility and perceived ability to contribute to social change. Further research regarding the influence of constructs such as locus of control, self-efficacy and collective efficacy based on the results of studies by Wallis and Loy (2021) as well as Cologna et al. (2021) could be of significance here. Beliefs about the political system (Huttunen, 2021) and constructs such as environmental citizenship (Dobson, 2003; Hadjichambis et al., 2020) may also have greater explanatory power in relation to identification with the FFF movement.

The mixed stereotypes content model could be a further enrichment of research on the FFF movement. This model captures the content of stereotypes through the two dimensions of warmth and competence. Most stereotypes toward social groups are characterized by a high expression on one dimension and a low expression on the other (Fiske et al., 2002). Research by Castro et al. (2016) showed that environmental activists are perceived as competent but not very warm. The current findings reveal a relatively positive overall perception of the movement, but identification is relatively low. The present study predominantly surveyed attributes that can be assigned to the dimension of competence, which is definitely associated with the movement. A

lack of perceived warmth could explain the low identification. A specification of the stereotypes toward the movement according to the mixed stereotype content model could contribute to the explanation and enrich the research.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Ethics Committee of the Faculty of Management and Economics; University of Duisburg-Essen (Ethics approval number: 2202009). The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation in this study was provided by the participants' legal guardians/next of kin.

Author contributions

VB and BB contributed to the study conception and design, performed material preparation, and data collection. BB performed the conjoint analysis. VB performed SEM model, descriptive analyses, and wrote the first draft of the manuscript. All authors commented on previous versions of the manuscript, read, and approved the final manuscript.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/frsus.2023.1231731/full#supplementary-material

References

Abrams, D., and Hogg, M. A. (1990). "An introduction to the social identity approach," in *Social Identity Theory: Constructive and Critical Advances*, eds D. Abrams, and M. A. Hogg (New York: Harvester Wheatsheaf), 1–10.

Ahearne, M., Bhattacharya, C. B., and Gruen, T. (2005). Antecedents and consequences of customer-company identification: expanding the role of relationship marketing. *J. Appl. Psychol.* 90, 574–585. doi: 10.1037/0021-9010.90.3.574

Anderson, J. C., and Gerbing, D. W. (1988). Structural equation modeling in practice: a review and recommended two-step approach. *Psychol. Bull.* 103, 411–423. doi: 10.1037/0033-2909.103.3.411

Andrews, M. (1991). *Lifetimes of Commitment: Aging, Politics, Psychology*. Cambridge: Cambridge University Press. doi: 10.1017/CBO9780511571176

Aprile, M. C., and Fiorillo, D. (2023). Other-regarding preferences in pro-environmental behaviours: empirical analysis and policy implications of organic and local food products purchasing in Italy. *J. Environ. Manage.* 343, 118174. doi: 10.1016/j.jenvman.2023.118174

Ashforth, B. E., and Mael, F. (1989). Social identity theory and the organization. *AMR* 14, 20–39. doi: 10.2307/258189

Backhaus, K., Erichson, B., Plinke, W., and Weiber, R. (2018). *Multivariate Analysemethoden*. Berlin, Heidelberg: Springer Gabler. doi: 10.1007/978-3-662-56655-8

Bagozzi, R. P., and Baumgartner, H. (1994). "The evaluation of structural equation models and hypothesis testing," in *Principles of Marketing Research*, ed R. P. Bagozzi (Cambridge, MA: Blackwell Business), 386–422.

Bagozzi, R. P., and Yi, Y. (1988). On the evaluation of structural equation models. *J Acad. Market. Sci.* 16, 74–94. doi: 10.1007/BF02723327

Bartels, J., and Hoogendam, K. (2010). The role of social identity and attitudes toward sustainability brands in buying behaviors for organic products. *J. Brand Manag.* 18, 697–708. doi: 10.1057/bm.2011.3

Bartels, J., and Onwezen, M. C. (2014). Consumers' willingness to buy products with environmental and ethical claims: the roles of social representations and social identity. *Int. J. Consum. Stud.* 38, 82–89. doi: 10.1111/ijcs.12067

Bartels, J., and Reinders, M. J. (2010). Social identification, social representations, and consumer innovativeness in an organic food context: a cross-national comparison. *Food Qual. Prefer.* 21, 347–352. doi: 10.1016/j.foodqual.2009.08.016

Bartels, J., and Reinders, M. J. (2016). Consuming apart, together: the role of multiple identities in sustainable behaviour. *Int. J. Consum. Stud.* 40, 444–452. doi: 10.1111/ijcs.12269

Bashir, N. Y., Lockwood, P., Chasteen, A. L., Nadolny, D., and Noyes, I. (2013). The ironic impact of activists: negative stereotypes reduce social change influence. Eur. J. Soc. *Psychol.* 43, 614–626. doi: 10.1002/ejsp.1983

Belk, R. W. (1988). Possessions and the extended self. *J. Consum. Res.* 15, 139. doi: 10.1086/209154

Bergami, M., and Bagozzi, R. P. (2000). Self-categorization, affective commitment and group self-esteem as distinct aspects of social identity in the organization. *Br J. Soc. Psychol.* 39, 555–577. doi: 10.1348/014466600164633

Bergkvist, L., and Rossiter, J. R. (2009). Tailor-made single-item measures of doubly concrete constructs. *Int. J. Advert.* 28, 607–621. doi: 10.2501/S0265048709200783

Bhattacharya, C. B., and Sen, S. (2003). Consumer–company identification: a framework for understanding consumers' relationships with companies. *J. Mark.* 67, 76–88. doi: 10.1509/jmkg.67.2.76.18609

Billig, M., and Tajfel, H. (1973). Social categorization and similarity in intergroup behaviour. *Eur. J. Soc. Psychol.* 3, 27–52. doi: 10.1002/ejsp.2420030103

Black, J. S., Stern, P. C., and Elworth, J. T. (1985). Personal and contextual influences on household energy adaptations. *J. Appl. Psychol.* 70, 3–21. doi: 10.1037/0021-9010.70.1.3

Bratt, C. (1999). The impact of norms and assumed consequences on recycling behavior. *Environ. Behav.* 31, 630–656. doi: 10.1177/00139169921972272

Brewer, M. B., Manzi, J. M., and Shaw, J. S. (1993). In-group identification as a function of depersonalization, distinctiveness, and status. *Psychol. Sci.* 4, 88–92. doi: 10.1111/j.1467-9280.1993.tb00466.x

Brewer, M. B., and Silver, M. (1978). Ingroup bias as a function of task characteristics. *Eur. J. Soc. Psychol.* 8, 393–400. doi: 10.1002/ejsp.2420080312

Brough, A. R., Wilkie, J. E. B., Ma, J., Isaac, M. S., and Gal, D. (2016). Is eco-friendly unmanly? the green-feminine stereotype and its effect on sustainable consumption. *J. Consum. Res.* 43, 567–582. doi: 10.1093/jcr/ucw044

Brown, R. J., and Turner, J. C. (1981). "Interpersonal and intergroup behaviour," in *Intergroup Behaviour*, ed. J. C. Turner, and H. Giles (Oxford: Blackwell Publishers), 33–65.

Browne, M. W., and Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociol. Methods Res.* 21, 230–258. doi: 10.1177/0049124192021002005

Bühner, M. (2021). *Einführung in die Test- und Fragebogenkonstruktion. 4., Korrigierte und Erweiterte Auflage*. München: Pearson.

Cammaerts, B., Bruter, M., Banaji, S., Harrison, S., and Anstead, N. (2014). The myth of youth apathy. *Am. Behav. Sci.* 58, 645–664. doi: 10.1177/0002764213515992

Canova, L., Bobbio, A., and Manganelli, A. M. (2020). Buying organic food products: the role of trust in the theory of planned behavior. *Front. Psychol.* 11, 575820. doi: 10.3389/fpsyg.2020.575820

Castano, E., Yzerbyt, V., Paladino, M.-P., and Sacchi, S. (2002). I belong, therefore, I exist: ingroup identification, ingroup entitativity, and ingroup bias. *Pers. Soc. Psychol. Bull.* 28, 135–143. doi: 10.1177/0146167202282001

Castro, P., Uzelgun, M. A., and Bertoldo, R. (2016). "Climate change activism between weak and strong environmentalism: advocating social change with moderate argumentation strategies?" in *The Social Psychology of Everyday Politics*, eds C. Howarth, and E. Andreouli (London: Routledge), 146–162.

Cologna, V., Hoogendoorn, G., and Brick, C. (2021). To strike or not to strike? An investigation of the determinants of strike participation at the Fridays for Future climate strikes in Switzerland. *PLoS ONE* 16, e0257296. doi: 10.1371/journal.pone.0257296

Copeland, L. (2014). Value change and political action. *Am. Polit. Res.* 42, 257–282. doi: 10.1177/1532673X13494235

Corrado, L., Fazio, A., and Pelloni, A. (2022). Pro-environmental attitudes, local environmental conditions and recycling behavior. *J. Clean. Prod.* 362, 132399. doi: 10.1016/j.jclepro.2022.132399

Csikszentmihalyi, M., and Halton, E. (1981). *The Meaning of Things: Domestic Symbols and the Self*. New York, NY: Cambridge University Press. doi: 10.1017/CBO9781139167611

de Groot, J. I. M., and Steg, L. (2009). Morality and prosocial behavior: the role of awareness, responsibility, and norms in the norm activation model. *J. Soc. Psychol.* 149, 425–449. doi: 10.3200/SOCP.149.4.425-449

de Moor, J., Uba, K., Wahlström, M., Wennerhag, M., and de Vydt, M. (2020). Protest for a future ii: Composition, mobilization and motives of the participants in fridays for future climate protests on 20–27 September, 2019, in 19 cities around the world. *Open Science Framework [Preprint]*. doi: 10.17605/OSF.IO/ASRUW

de Weerd, M., and Klandermans, B. (1999). Group identification and political protest: farmers' protest in the Netherlands. *Eur. J. Soc. Psychol.* 29, 1073–1095. doi: 10.1002/(SICI)1099-0992(199912)29:8<1073::AID-EJSP986>3.0.CO;2-K

Dermody, J., Hanmer-Lloyd, S., Koenig-Lewis, N., and Zhao, A. L. (2015). Advancing sustainable consumption in the UK and China: the mediating effect of pro-environmental self-identity. *J. Mark. Manag.* 31, 1472–1502. doi: 10.1080/0267257X.2015.1061039

Díaz, S., Settele, J., Brondízio, E. S., Ngo, H. T., Guèze, M., Agard, J., et al. (2019). *Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. Bonn: IPBES secretariat. Available online at: https://www.ipbes.net/global-assessment (accessed February 25, 2023).

Diego, C. P., Nique, W. M., Herter, M. M., and Borges, A. (2016). Green consumers and their identities: how identities change the motivation for green consumption. *Int. J. Consum. Stud.* 40, 742–753. doi: 10.1111/ijcs.12282

Dobson, A. (2003). *Citizenship and the Environment*. Oxford: Oxford University Press. doi: 10.1093/0199258449.001.0001

Dono, J., Webb, J., and Richardson, B. (2010). The relationship between environmental activism, pro-environmental behaviour and social identity. *J. Environ. Psychol.* 30, 178–186. doi: 10.1016/j.jenvp.2009.11.006

Dunlap, R. E., van Liere, K. D., Mertig, A. G., and Jones, R. E. (2000). New trends in measuring environmental attitudes: measuring endorsement of the new ecological paradigm: a revised NEP scale. *J. Soc. Issues* 56, 425–442. doi: 10.1111/0022-4537.00176

Ehrlich, H. J. (1973). *The social Psychology of Prejudice*. New York, NY: Wiley.

Ellemers, N., Kortekaas, P., and Ouwerkerk, J. W. (1999). Self-categorisation, commitment to the group and group self-esteem as related but distinct aspects of social identity. *Eur. J. Soc. Psychol.* 29, 371–389. doi: 10.1002/(SICI)1099-0992(199903/05)29:2/3<371::AID-EJSP932>3.0.CO;2-U

Ellemers, N., van Rijswijk, W., Roefs, M., and Simons, C. (1997). Bias in intergroup perceptions: balancing group identity with social reality. *Pers. Soc. Psychol. Bull.* 23, 186–198. doi: 10.1177/0146167297232007

European Commission, Directorate-General for Environment (2021). *Attitudes of Europeans towards the environment – Report. European Commission*. Available online at: https://data.europa.eu/doi/10.2779/902489 (accessed February 25, 2023).

Fiske, S. T., Cuddy, A. J. C., Glick, P., and Xu, J. (2002). A model of (often mixed) stereotype content: competence and warmth respectively follow from perceived status and competition. *J. Pers. Soc. Psychol.* 82, 878–902. doi: 10.1037/0022-3514.82.6.878

Fornell, C., and Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *J. Market. Res.* 18, 39–50. doi: 10.1177/002224378101800104

Fornell, C. G. (1982). "A second generation of multivariate analysis: an overview," in *A Second Generation of Multivariate Analysis*, ed C. Fornell (New York, NY: Praeger), 1–21.

Fridays For Future (2022). *Strike Statistics*. Available online at: https://fridaysforfuture.org/what-we-do/strike-statistics/ (accessed September 09, 2022).

Gardner, B. G., and Neuber, M. (2021). *Fighting Every Crisis in the Wake of Covid-19: Shifting Grounds for Mobilization among Fridays for Future Protesters in Germany*. OSF Preprints [Preprint]. Available online at: https://osf.io/rsy92 (accessed October 15, 2022).

Gatersleben, B., Murtagh, N., and Abrahamse, W. (2014). Values, identity and pro-environmental behaviour. *Contemp. Soc. Sci.* 9, 374–392. doi: 10.1080/21582041.2012.682086

Hadjichambis, A. C., Reis, P., Paraskeva-Hadjichambi, D., Cinčera, J., Boeve-de Pauw, J., Gericke, N., et al. (2020). *Conceptualizing Environmental Citizenship for 21st Century Education*. Berlin and Heidelberg: Springer. doi: 10.1007/978-3-030-20249-1

Hair, J. F., Black, W. C., Babin, B. J., and Anderson, R. E. (2019). *Multivariate Data Analysis*, 8th ed. Andover: Cengage.

Harland, P., Staats, H., and Wilke, H. A. M. (2007). Situational and personality factors as direct or personal norm mediated predictors of pro-environmental behavior: questions derived from norm-activation theory. *Basic Appl. Soc. Psych.* 29, 323–334. doi: 10.1080/01973530701665058

Haslam, S. A., Turner, J. C., Oakes, P. J., McGarty, C., and Hayes, B. K. (1992). Context-dependent variation in social stereotyping 1: the effects of intergroup relations as mediated by social change and frame of reference. *Eur. J. Soc. Psychol.* 22, 3–20. doi: 10.1002/ejsp.2420220104

Helm, S., Serido, J., Ahn, S. Y., Ligon, V., and Shim, S. (2019). Materialist values, financial and pro-environmental behaviors, and well-being. *Young Consum.* 20, 264–284. doi: 10.1108/YC-10-2018-0867

Hill, J. A. (2011). Endangered childhoods: how consumerism is impacting child and youth identity. *Media Cult. Soc.* 33, 347–362. doi: 10.1177/0163443710393387

Hogg, M. A., and Terry, D. I. (2000). Social identity and self-categorization processes in organizational contexts. *AMR* 25, 121–140. doi: 10.2307/259266

Homburg, C., and Baumgartner, H. (1995). Beurteilung von Kausalmodellen. Bestandsaufnahme und Anwendungsempfehlungen. *Mark. Z. Forsch. Praxis* 17, 162–176. doi: 10.15358/0344-1369-1995-3-162

Hopper, J. R., and Nielsen, J. M. (1991). Recycling as altruistic behavior - normative and behavioral strategies to expand participation in a community recycling program. *Environ. Behav.* 23, 195–220. doi: 10.1177/0013916591232004

Hossain, I., Nekmahmud, M., and Fekete-Farkas, M. (2022). How do environmental knowledge, eco-label knowledge, and green trust impact consumers' pro-environmental behaviour for energy-efficient household appliances? *Sustainability* 14, 6513. doi: 10.3390/su14116513

Hunecke, M., Blöbaum, Anke Ph.D., Matthies, E., and Höger, R. (2001). Responsibility and environment - ecological norm orientation and external factors in the domain of travel mode choice behavior. *Environ. Behav.* 33, 830–852. doi: 10.1177/00139160121973269

Huttunen, J. (2021). Young rebels who do not want a revolution: the non-participatory preferences of fridays for future activists in Finland. *Front. Polit. Sci.* 3, 672362. doi: 10.3389/fpos.2021.672362

Jegethesan, K., Sneddon, J. N., and Soutar, G. N. (2012). Young Australian consumers' preferences for fashion apparel attributes. *J. Fash. Mark. Manag.* 16, 275–289. doi: 10.1108/13612021211246044

Jöreskog, K. G., and Sörbom, D. (1982). Recent developments in structural equation modeling. *J. Mark. Res.* 19, 404–416. doi: 10.1177/002224378201900402

Katz, D., and Braly, K. (1933). Racial stereotypes of one hundred college students. *J. Abnormal Soc. Psychol.* 28, 280–290. doi: 10.1037/h0074049

Kelly, C., and Kelly, J. (1994). Who gets involved in collective action? social psychological determinants of individual participation in trade unions. *Hum. Relat.* 47, 63–88. doi: 10.1177/001872679404700104

Kim, Y.-H. (2019). Organic shoppers' involvement in organic foods: self and identity. *Br. Food J.* 121, 139–156. doi: 10.1108/BFJ-03-2018-0202

Kirmani, M. D., and Khan, M. N. (2016). Green-consumerism-a review of extent literature. *Pacific Bus. Rev. Int.* 9, 48–59. doi: 10.1016/j.clrc.2022.100089

Leonidou, C. N., and Leonidou, L. C. (2011). Research into environmental marketing/management: a bibliographic analysis. *Eur. J. Mark.* 45, 68–103. doi: 10.1108/03090561111095603

Lind, H. B., Nordfjærn, T., Jørgensen, S. H., and Rundmo, T. (2015). The value-belief-norm theory, personal norms and sustainable travel mode choice in urban areas. *J. Environ. Psychol.* 44, 119–125. doi: 10.1016/j.jenvp.2015.06.001

Mael, F., and Ashforth, B. E. (1992). Alumni and their alma mater: a partial test of the reformulated model of organizational identification. *J. Organ. Behav.* 13, 103–123. doi: 10.1002/job.4030130202

Masson, T., Jugert, P., and Fritsche, I. (2016). Collective self-fulfilling prophecies: group identification biases perceptions of environmental group norms among high identifiers. *Soc. Influence* 11, 185–198. doi: 10.1080/15534510.2016.1216890

Masson-Delmotte, V., Zhai, P., Pirani, A., Connors, S. L., Péan, C., Chen, Y., et al. eds. (2021). *IPPC, 2021: Climate Change 2021: The Physical Science Basis: Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, NY: Cambridge University Press.

Mundaca, L., Román-Collado, R., and Cansino, J. M. (2022). Assessing the impacts of social norms on low-carbon mobility options. *Energy Policy* 162, 112814. doi: 10.1016/j.enpol.2022.112814

Neuber, M., Daniel, A., and Gardner, B. G. (2021). Protesting for the future in pandemic contexts. comparing participants in fridays for future global climate strikes in Austria and Germany. *Open Science Framework [Preprint]*. doi: 10.31219/osf.io/sb325

Noth, F., and Tonzer, L. (2022). Understanding climate activism: who participates in climate marches such as "Fridays for Future" and what can we learn from it? *Energy Res. Soc. Sci.* 84, 102360. doi: 10.1016/j.erss.2021.102360

Nunnally, J. C. (1978). *Psychometric Theory*. New York, NY: McGraw-Hill.

Oakes, P. J., Turner, J. C., and Haslam, S. A. (1991). Perceiving people as group members: the role of fit in the salience of social categorizations. *Br. J. Soc. Psychol.* 30, 125–144. doi: 10.1111/j.2044-8309.1991.tb00930.x

O'Brien, K., Selboe, E., and Hayward, B. M. (2018). Exploring youth activism on climate change: dutiful, disruptive, and dangerous dissent. *Ecol. Soc.* 23, 42. doi: 10.5751/ES-10287-230342

Paul, J., Modi, A., and Patel, J. (2016). Predicting green product consumption using theory of planned behavior and reasoned action. *J. Retail. Consum. Serv.* 29, 123–134. doi: 10.1016/j.jretconser.2015.11.006

Peattie, K. (2001). Towards sustainability: the third age of green marketing. *Mark. Rev.* 2, 129–146. doi: 10.1362/1469347012569869

Perera, C., Auger, P., and Klein, J. (2018). Green consumption practices among young environmentalists: a practice theory perspective. *J. Bus. Ethics* 152, 843–864. doi: 10.1007/s10551-016-3376-3

Petrescu, M. (2013). Marketing research using single-item indicators in structural equation models. *J. Market. Anal.* 1, 99–117. doi: 10.1057/jma.2013.7

Prendergast, K., Hayward, B., Aoyagi, M., Burningham, K., Hasan, M. M., Jackson, T., et al. (2021). Youth attitudes and participation in climate protest: an international cities comparison frontiers in political science special issue: youth activism in environmental politics. *Front. Polit. Sci.* 3, 107. doi: 10.3389/fpos.2021.696105

Ratliff, K. A., Howell, J. L., and Redford, L. (2017). Attitudes toward the prototypical environmentalist predict environmentally friendly behavior. *J. Environ. Psychol.* 51, 132–140. doi: 10.1016/j.jenvp.2017.03.009

Roy, R. E., Weibust, K. S., and Miller, C. T. (2007). Effects of stereotypes about feminists on feminist self-identification. *Psychol. Women Q.* 31, 146–156. doi: 10.1111/j.1471-6402.2007.00348.x

Scherhorn, G., Neuner, M., Raab, G., and Reisch, L. (1990). Konzepte und Indikatoren der Untersuchung über promaterielle und postmaterielle Lebensstile. *Arbeitspapier* 56.

Schleyer-Lindenmann, A., Ittner, H., Dauvier, B., and Piolat, M. (2018). Die NEP-Skala – hinter den (deutschen) kulissen des umweltbewusstseins. *Diagnostica* 64, 156–167. doi: 10.1026/0012-1924/a000202

Schulte, M., Bamberg, S., Rees, J., and Rollin, P. (2020). Social identity as a key concept for connecting transformative societal change with individual environmental activism. *J. Environ. Psychol.* 72, 101525. doi: 10.1016/j.jenvp.2020.101525

Shaw, D., Hogg, G., Wilson, E., Shiu, E., and Hassan, L. (2006). Fashion victim: the impact of fair trade concerns on clothing choice. *J. Strateg. Mark.* 14, 427–440. doi: 10.1080/09652540600956426

Simon, B., Stürmer, S., and Steffens, K. (2000). Helping individuals or group members? The role of individual and collective identification in AIDS volunteerism. *Pers. Soc. Psychol. Bull.* 26, 497–506. doi: 10.1177/0146167200266008

Soliev, I., Janssen, M. A., Theesfeld, I., Pritchard, C., Pirscher, F., and Lee, A. (2021). Channeling environmentalism into climate policy: an experimental study of Fridays for future participants from Germany. *Environ. Res. Lett.* 16, 114035. doi: 10.1088/1748-9326/ac30f7

Sommer, M., Rucht, D., Haunss, S., and Zajak, S. (2019). *Fridays for Future. Profil, Entstehung und Perspektiven der Protestbewegung in Deutschland*. doi: 10.13140/RG.2.2.32374.96327

Spears, R., Doosje, B., and Ellemers, N. (1997). Self-stereotyping in the face of threats to group status and distinctiveness: the role of group identification. *Pers. Soc. Psychol. Bull.* 23, 538–553. doi: 10.1177/0146167297235009

Steg, L., and Vlek, C. (2009). Encouraging pro-environmental behaviour: an integrative review and research agenda. *J. Environ. Psychol.* 29, 309–317. doi: 10.1016/j.jenvp.2008.10.004

Stern, P. C. (2000). Toward a coherent theory of environmentally significant behavior. *J. Soc. Issues* 56, 407–424. doi: 10.1111/0022-4537.00175

Stern, P. C., Dietz, T., Abel, T. D., Guagnano, G. A., and Kalof, L. (1999). A value-belief-norm theory of support for social movements: the case of environmentalism. *Hum. Ecol. Rev.* 6, 81–97.

Stryker, S., Owens, T. J., and White, R. W. (2000). *Self, Identity, and Social Movements*. Minneapolis, MN: University of Minnesota Press.

Svensson, A., and Wahlström, M. (2021). Climate change or what? Prognostic framing by Fridays for Future protesters. *Soc. Mov. Stud.* 22, 1–22. doi: 10.1080/14742837.2021.1988913

Tajfel, H. (1974). Social identity and intergroup behaviour. *Soc. Sci. Inf.* 13, 65–93. doi: 10.1177/053901847401300204

Tajfel, H. (1978). "Interindividual behaviour and intergroup behaviour," in Differentiation between Social Groups: studies in the social psychology of intergroup relations, ed. H. Tajfel (London: Academic Press), 27–60.

Tajfel, H. (1981a). *Human Groups and Social Categories: Studies in Social Psychology*. Cambridge: Cambridge Univ. Press.

Tajfel, H. (1981b). "Social stereotypes and social groups," in *Intergroup Behaviour*, ed. J. C. Turner, and H. Giles (Offord: Basil Black well Ublisher Ltd), 144–167.

Tajfel, H., Billig, M. G., Bundy, R. P., and Flament, C. (1971). Social categorization and intergroup behaviour. *Eur. J. Soc. Psychol.* 1, 149–178. doi: 10.1002/ejsp.2420010202

Tajfel, H., and Turner, J. C. (1979). "An integrative theory of intergroup conflict," in *The social Psychology of Intergroup Relations*, ed. W. G. Austin (Monterey, California: Brooks/Cole), 33–47.

Terry, D. J., Hogg, M. A., and White, K. M. (1999). The theory of planned behaviour: self-identity, social identity and group norms. *Br. J. Soc. Psychol.* 38, 225–244. doi: 10.1348/014466699164149

Thøgersen, J. (1996). Recycling and morality - a critical review of the literature. *Environ. Behav.* 28, 536–558. doi: 10.1177/0013916596284006

Thøgersen, J. (1999). The ethical consumer. Moral norms and packaging choice. *J. Consum. Policy* 22, 439–460. doi: 10.1023/A:1006225711603

Thøgersen, J. (2002). Direct experience and the strength of the personal norm-behavior relationship. *Psychol. Mark.* 19, 881–893. doi: 10.1002/mar.10042

Turner, J. C. (1978). "Social comparison, similarity and ingroup favouritism," in *Differentiation between Social Groups: Studies in the Social Psychology of Intergroup Relations*, ed. H. Tajfel (London: Academic Press), 235–250.

Turner, J. C. (1982). "Towards a cognitive redefinition of the social group," in *Social Identity and Intergroup Relations*, ed. H. Tajfel. 1. paperback printing (Cambridge: Cambridge Univ. Press), 15–36.

Turner, J. C. (1985). "Social categorization and the self-concept: a social cognitive theory of group behavior," in *Advances in Group Processes: Theory and Research*, ed. E. J. Lawler (Greenwich, CT: JAI Press.), 77–122.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., Wetherell, and Margaret S. (1987). *Rediscovering the Social Group: A Self-categorization Theory*. Oxford: Blackwell.

Turner, J. C., Oakes, P. J., Haslam, S. A., and McGarty, C. (1994). Self and collective: cognition and social context. *Pers. Soc. Psychol. Bull.* 454–463. doi: 10.1177/0146167294205002

Turner, J. C., and Reynolds, K. J. (2010). "The story of social identity," in *Rediscovering Social Identity*, eds T. Postmes, and N. R. Branscombe (London: Psychology Press), 13–32.

Turner, J. C., and Reynolds, K. J. (2012). "Self-categorization theory," in *Handbook of Theories of Social Psychology: Volume 2*, eds P. A. van Lange, A. W. Kruglanski, and T. E. Higgins (London: SAGE Publications), 399–417. doi: 10.4135/9781446249222.n46

Veenstra, K., and Haslam, S. A. (2000). Willingness to participate in industrial protest: exploring social identification in context. *Br. J. Soc. Psychol.* 39, 153–172. doi: 10.1348/014466600164390

Vermeir, I., and Verbeke, W. (2006). Sustainable food consumption: exploring the consumer "attitude – behavioral intention" gap. *J. Agric. Environ. Ethics* 19, 169–194. doi: 10.1007/s10806-005-5485-3

Vermeir, I., and Verbeke, W. (2008). Sustainable food consumption among young adults in Belgium: theory of planned behaviour and the role of confidence and values. *Ecol. Econ.* 64, 542–553. doi: 10.1016/j.ecolecon.2007.03.007

Wahlström, M., Kocyba, P., Vydt, M., and De Moor, J. (2019). *Protest for a Future: Composition, Mobilization and Motives of the Participants in Fridays For Future Climate Protests on 15 March, 2019 in 13 European cities.* Available online at: https://eprints.keele.ac.uk/id/eprint/6571/ (accessed February 25, 2023).

Wallis, H., and Loy, L. S. (2021). What drives pro-environmental activism of young people? A survey study on the Fridays For Future movement. *J. Environ. Psychol.* 74, 101581. doi: 10.1016/j.jenvp.2021.101581

Weiber, R., and Mühlhaus, D. (2014). *Strukturgleichungsmodellierung: Eine Anwendungsorientierte Einführung in die Kausalanalyse mit Hilfe von AMOS, SmartPLS und SPSS. 2. Aufl. 2014*. Berlin, Heidelberg: Springer Berlin Heidelberg. doi: 10.1007/978-3-642-35012-2

West, S. G., Finch, J. F., and Curran, P. J. (2000). "Structural equation models with nonnormal variables: problems and remedies," in *Structural Equation Modeling: Concepts, Issues, and Applications*, ed. R. H. Hoyle. (Thousand Oaks, California: Sage), 56–75.

Ziesemer, F., Hüttel, A., and Balderjahn, I. (2021). Young people as drivers or inhibitors of the sustainability movement: the case of anti-consumption. *J. Consum. Policy* 44, 427–453. doi: 10.1007/s10603-021-09489-x

DOI: 10.3389/frsus.2023.1231731
URN: urn:nbn:de:hbz:465-20231011-110818-2