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Who's the preferred environmentalist? And for whom?
A multidimensional approach to impressions of environmentalists using a conjoint analysis

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ERASMUS Mundus Joint Master in the Psychology of Global Mobility, Inclusion and Diversity in Society (Global-MINDS)

Supervisor:
Doutora Miriam Rosa, Integrated Researcher and invited Professor,
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I dedicate this work to my father. Without your tireless support, scientific dedication, and care throughout my life this thesis would not have been possible.

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At this point I would like to thank everyone who has helped and supported me, personally and professionally, directly and indirectly, throughout the process of this master thesis and the entire journey of the Global-MINDS master. It has been filled with intense, transformative, and inspirational experiences, that I regret are coming to an end.

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Thank you for continuing to be with me on my journey.

Resumo

Investigação anterior indicou que os estereótipos acerca de ambientalistas são barreiras ao envolvimento do público e identificação com o ambientalismo (Bashir et al., 2013; Pearson et al., 2018), mas não identificou que atributos afetam as impressões de e identificação com ambientalistas, e de que formas próprias pertenças grupais afetam essas relações. Este trabalho procurou preencher essa lacuna medindo respostas a descrições fictícias de perfis de ambientalistas (Stenhouse & Heinrich, 2019), investigando a complexa influência de múltiplas características (p. ex. género, profissão, tipo de ambientalismo, etc.) nos estereótipos (sociabilidade, competência e confiabilidade), tipicalidade, e identificação com os perfis.

Aplicando uma nova análise conjunta experimental, 678 residentes nos Estados Unidos percecionaram, entre outros resultados, que perfis mais típicos foram os de mulheres, Asiáticos/as, empregados/as de limpeza ou de escritório, politicamente moderados/as ou liberais, com comportamentos na esfera privada ou moderados, com preocupações globais. Identificaram-se mais com perfis de mulheres, empregados/as de limpeza e com ambientalismo na esfera privada. Perfis atípicos melhoraram as impressões apenas para comportamentos privados e para a profissão de empregado/a de limpeza. Além disso, as respostas foram influenciadas por categorizações dos próprios participantes (p.ex. orientação política).

Apesar de limitações tais como estratégias de amostragem diferentes, os resultados ampliam o conhecimento sobre as perceções de ambientalistas, um grupo muito estereotipado e politizado nos Estados Unidos. Assim, abrem-se novas direções sobre formação de impressões e a aplicação de análises conjuntas em investigação psicológica, e fornecem-se aos movimentos ambientalistas contributos valiosos sobre a fonte e conteúdo de mensagens, relativamente às audiências-alvo.

Palavras Chave: ambientalistas, estereótipos, análise conjunta experimental, identidade social, residentes nos EUA

Categorias e Códigos de Classificação segundo APA PsycINFO:

3020 Processos de grupo e interpessoais

3040 Perceção e cognição social

Abstract

Previous research found stereotypes of environmentalists as barriers to public engagement and identification with environmentalism (Bashir et al., 2013; Pearson et al., 2018), but missed to identify which attributes of an environmentalist affect people's impressions and self-identification, as well as how perceiver's own group membership(s) influence this relationship. The present work tried to fill this gap by measuring responses to diverse fictitious profile descriptions of environmentalists (Stenhouse & Heinrich, 2019), investigating the complex influence of the profiles' multiple features (e.g., gender, occupation, type of pro-environmentalism, etc.) on stereotypes (competence, friendliness, and trustworthiness), perceived typicality, and participants' self-identification with the described profiles.

Through the novel application of a conjoint experiment, a sample of 678 U.S. residents generally perceived, among other results, profiles of women, Asian, cleaners or office clerks, political moderates or liberals, private to moderate behaviors, with mainly global environmental concerns to be more typical. Moreover, they identified most with profiles of women, cleaners, and privately pro-environmental. Atypical profile descriptions only improved the participants' impressions regarding private pro-environmental behaviors and the occupation cleaner. Also, responses were influenced by self-assessed categorizations (e.g., political orientation).

In spite of limitations such as multiple sampling strategies, these findings extend the knowledge on dimension-specific perceptions of the strongly stereotyped and politicized social category of environmentalists in the U.S. Hereby, we open new directions regarding impression formation research, and the application of conjoint analyses in psychological research. Moreover, we provide the environmental movement valuable input regarding message source and content in relation to the targeted audience.

Keywords: environmentalists, stereotypes, conjoint experiment, social identity, U.S. residents

APA PsycINFO Classification Categories and Codes:

3020 Group & Interpersonal Processes

3040 Social Perception & Cognition

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Glossary of acronyms

AMCE	Average Marginal Component Effect
CEO	Chief Executive Officer
CI	Confidence interval
MTurk	Amazon Mechanical Turk
MM	Marginal Mean
POC	People of Color
SCM	Stereotype Content Model
SES	Social-economic status
U.S.	United States (of America)
US EPA	United States Environmental Protection Agency

Introduction

The protection of the environment and climate change are among the most polarizing and politicized issues in the United States of America (Feygina et al., 2010; McCright & Dunlap, 2011; Pew Research Center, 2020). But this was not always the case; in 1991, 78% of U.S. Americans considered themselves "Environmentalists", but these numbers dropped to 41% by 2021 while there was no observable trend regarding their environmental concern (Gallup, 2021). One explanation for this decreasing identification refers to the increasingly polarizing political debate on environmental issues, with Democrats, as compared to Republicans, being more than twice as likely to identify themselves as environmentalists and show greater concern about the environment (Dunlap et al., 2001; Gallup, 2021). In addition, an increase in negative stereotyping against a group of people who think of themselves as environmentalists or environmentally conscious (e.g., being aggressive, stubborn, or eccentric) may have led to the observed decrease in environmental identification (Bashir et al., 2013; Klas et al., 2019; Stewart & Clark, 2011).

Moreover, U.S. ethnic and racial minorities as well as lower-class subgroups are still considered least concerned about the environment and continue to be poorly represented in environmental organizations (Hiltner, 2019; Pearson & Schuldt, 2014; Taylor, 2014). This is in contradiction to underrepresented and low-income populations being disproportionately impacted by and exposed to environmental risks (Mohai et al., 2009; Timmons Roberts et al., 2018). For instance, only 16% of the board members and general staff of environmental organizations and non-profits in the U.S. consisted of ethnic minorities (e.g., African American, Hispanics, Asians, Native Americans) while their share in the U.S. population in 2013 made up 38% (Taylor, 2014). Classified as a "diversity crisis" (Pearson & Schuldt, 2014, p.1034), reasons for this imbalance are persistent inequalities (e.g., of chance, education), unconscious bias (e.g., in hiring practices), and stereotypes (e.g., as not being concerned) towards racial-ethnic minority groups (Hiltner, 2019; Taylor, 2014).

In this master thesis, we assume that preexisting negative stereotypes towards environmentalists prevent individuals of the general public from identifying, sympathizing, or supporting them (Bashir et al., 2013; Pearson et al., 2018). By mapping out the underlying judgements that U.S. residents have of environmentalists (i.e., concerning competence, friendliness, and trustworthiness), we aim to understand towards which personal attributes of environmentalists, people feel to be more positively and negatively related. Moreover, we aim

to comprehend the influence of people's personal characteristics on making appraisals about the environmentalists.

Previous research had connected climate change and environmental justice[1] research with socio-psychological approaches through the study of intergroup processes (Pearson & Schuldt, 2018; Swim & Bloodhart, 2018). For example, (negative) stereotypes towards environmentalists were identified as barriers to social change (Bashir et al., 2013) as well as people's preferences towards pro-environmental messages from the same U.S. political party members (Bolsen et al., 2019). Based on this research, Stenhouse and Heinrich (2019) applied a conjoint analysis to test people's attraction to multiple personal attributes of climate activists as well as how responses differed due to people's political party affiliation. However, their study failed to analyze people's judgements on environmentalists' multiple identity dimensions, sources of identification with the profiles, and the influence of a number of the perceivers' characteristics. Employing a conjoint analysis via a multidimensional rating experiment, as well, this thesis project aims at analyzing patterns of public impressions, perceptions of the prototypical environmentalist, and people's identification with environmentalists. All, while integrating an interplay of several identity dimensions of environmentalists and participants (e.g., social class, race/ethnicity, political orientation). This novel approach contributes to the stereotype literature on public impressions of environmentalists, as well as to clarify sources of influence and identification with the environmental movements. Concluding our results, implications on how to increase member diversity and public support will be provided.

In the following sections, the theoretical framework and relevant concepts will be presented. In this respect, Chapter 1 will highlight the psychology of social identification and stereotypes as well as how these relate to the stereotypes of environmentalists perceived by the general public. Chapter 2 will outline the empirical part of this thesis including an introduction to conjoint analyses, how it is put into practice as main methodological tool for the present study, and the corresponding results. Further, in Chapter 3, the results and the study limitations will be discussed as well as their implications for future research and the environmental practice. Last, in Chapter 4 we conclude this study with a final statement.

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[1] Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys: The same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work. (US EPA, 2014)

CHAPTER 1

Literature review

2.1. Social identification and Stereotypes

Social identification and stereotyping are cognitive processes grounded in the *Social Identity Approach, combining both Social Identity Theory and Self-Categorization Theory* (Tajfel, 1978; Tajfel & Turner, 1979; Turner et al., 1987). Someone's social identity is considered the representation of an individual's sense of who they are based on their membership(s) and feelings of belonging to other social groups as sources of pride and self-esteem. These memberships can derive from the individual's age group, gender identity, nationality, social class, political orientation etc., providing social norms and guidance through the social world (Dietz & Whitley, 2018; Hogg & Reid, 2006). Through the cognitive process of social categorization, people organize and simplify their social environment into social categories (Hogg & Reid, 2006; Turner et al., 1987). The abstract mental representation that first comes to mind when thinking of a social category is of the group *prototype* (Rosch, 1973). A prototype is the *ideal* and *typical group member* defined by a set of attributes (e.g., traits or behaviors) most representative for the group (Gerrard et al., 2005). Hence, someone's typicality is the degree to which that person or group approximates from the prototype.

Concluding, social identification is considered the process of adopting the identity, norms, and behaviors "together with the value and emotional significance attached to that membership" (Tajfel, 1978, p.3) of the group to which a person has categorized themselves, and therefore becomes an important source of self-esteem and sense of belonging. Once categorized, similarities within and differences between group categories become more salient through social comparisons (Hogg & Reid, 2006). Negative consequences might arise due to ingroup favoritism and the perception of strong intergroup differences, giving way to outgroup biases such as *Stereotypes* and *Misperceptions* (Brewer, 2007; Thomas, 1992). It is important to distinguish between a prototype, which represents the ideal and most typical member of a group, and a stereotype, which is a mental representation that does not necessarily embody the ideal group member (Hilton & von Hippel, 1996). While some stereotypes may be based on real differences between groups, other stereotypes might be formed about groups independently from actual differences (Hilton & von Hippel, 1996). In particular, associations and beliefs about relatively permanent characteristics of a group (e.g., race, gender, social class) are often

oversimplified in a negative way (Hilton & von Hippel, 1996). Hence, creating the expectations and perceptions that all members of that specific group show the same traits without exceptions (Abrams & Hogg, 2010; Dovidio et al., 2010). One example of a strongly stereotyped group in the U.S., and that we will focus on in this study, is the social category of *Environmentalists*. Disseminated through the social world, stereotypes influence how people perceive and respond to in-vs-out-group members (Haslam et al., 1998). These perceptions and impressions have been assessed through the following measures.

2.1.1. Measuring impressions

Numerous studies have shown that positive and negative evaluations of other people and groups are formed and can be assessed through two dimensions of social perception and judgement, captured in the *Stereotype content model* (SCM, Fiske et al., 2002). More precisely, on the dimensions of *Warmth/Sociability* (e.g., warm, friendly) and *Competence* (e.g., competent, intelligent). Different dimension combinations result in distinct intergroup emotions (i.e., pity, envy, admiration, and contempt) and, consequently, in different forms of prejudices. By examining the content of people's perceptions of different groups (presented through characteristics of age, gender, occupation, ethnicity, race, etc.), Fiske et al. (2002) mapped out stereotypic patterns and directions present in society. For example, studies showed that elderly people were perceived less competent but friendly (i.e., pitied), while younger people were rated both warm and competent at a medium level (Fiske et al., 2002). Men were seen mostly competent but not warm (i.e., admired and envied), while women were seen both competent and warm (i.e., admired). Regarding race and ethnicity, U.S. racial-ethnic minority groups such as Hispanics, Native Americans, and Blacks were perceived as warm and competent at a medium level, Asians as competent but not warm, while Whites were seen as both high on warmth and competence (Fiske et al., 2002). Stereotypically, status predicted competence and competition predicted a low level of warmth, which provides a basis of how other groups may be (dis)liked and (dis)respected. Leach et al. (2007) extended this research by proposing and testing another dimension - *Morality* (e.g., honest, trustworthy), demonstrating its importance in positive ingroup evaluations and relevance as independent and distinct from the previous dimensions Sociability and Competence, when evaluating members of an in- or outgroups.

The present study aims to contribute to the social identity and stereotype literature by capturing patterns of the general publics' impressions and judgments of environmentalists on the stereotypical dimensions of Competence, Sociability, and Morality. Moreover, we aim to

measure participants' self-identification with environmentalists as well as their perceptions of environmentalists' typicality, in regard to a number of attributes.

2.2. Environmentalists

In the following, we will focus on the stereotypes as well as typical associations held by others about the environmentalist social category and its group members (Klas, 2016). To do so, we need to clarify first what is understood in the present study by the term *Environmentalist*.

Tesch and Kempton (2004) examined the multiple meanings associated with this social category and stressed the relevance of defining the term, as to predict group identification and pro-environmental behaviors. Klas (2016) conceptualized the superordinate environmentalist social category as an "opinion-based" and "extremely fluid and highly politicized" category with its "defining feature [being] the shared ideology of protection for the natural environment" (pp.9-10). The resulting environmentalist social identity is considered the sense of self and belonging to that group members derive from the psychologically meaningful membership to the environmentalist category (Klas, 2016, p.9).

Based on previous research (Bashir, 2010; Klas, 2016; Tesch & Kempton, 2004), we summarized a rather broad understanding of environmentalists to enable a larger number of people to identify with that social category. The term environmentalist will be defined by the following definition throughout the study:

> Everyone has different images when thinking of environmentalists. For the purpose of this study, the term ***environmentalist*** is used broadly to refer to a person who cares and is concerned with or advocates for the protection and improvement of the(ir) environment through different means. This may include conservationists, preservationists, ecologists, nature-lovers, or otherwise environmentally minded people.

2.2.1. Perceptions and Stereotypes of Environmentalists

Keeping in mind this rather broad definition, previous research on environmentalist stereotypes identified a variety of positive and negative associations present in the general public's perceptions. Acknowledging that positive attitudes towards the prototypical environmentalist and the identification as environmentalist were found to predict pro-environmental behaviors and policy preferences (Brick & Lai, 2018; Ratliff et al., 2017), stereotypes may explain the social barriers to the identification with as well as engagement in the environmental movement

for different groups in society (Bashir et al., 2013; Klas et al., 2019; Swim & Bloodhart, 2018). The following outline aims at highlighting the different stereotypes that the general public holds towards environmentalists and the traits associated with the prototype of this social category.

As mentioned earlier, a stereotype is a mental representation not necessarily embodying the ideal group member and maybe even negatively oversimplifying a social category (Hilton & von Hippel, 1996). With this in mind, perceptions of and reactions to different sub-groups of environmentalists can vary depending on how they are labeled or the level of engagement in pro-environmental activities they are associated with (Bashir, 2010; Bashir et al., 2013; Castro et al., 2016). For example, in a study by Bashir (2010), stereotypical representations of environmentalists labeled "tree-huggers" or "radical activists" and described as "eccentric" activated negative responses among study participants. Moreover, a mainstream environmentalist representation described as "popular" and "smart" was more liked. In a different study by Bashir et al. (2013), individuals even avoided to affiliate with environmentalists when they perceived them as "militant/aggressive" or "eccentric/unconventional". These results are in line with findings of Klas et al. (2019): behaviors at an individual/private level (e.g., recycling) were perceived more positively (e.g., valuing nature and being involved in positive change), whereas collective action or other public sphere behaviors (e.g., demonstrations) were judged negatively (e.g., aggressive and stubborn). Despite these valuable findings, the presented studies failed to assess and examine the important influence of their participants' social identity dimensions (e.g., their race, ethnicity, or political orientation). The present study fills this gap by measuring multiple factors relating to the study participants' group memberships and analyze these for subgroup differences.

Within the framework of the SCM (Fiske et al., 2002), presented previously, research by Castro et al. (2016) identified that fictitious individuals expressing *strong* or *radical* environmentalism were negatively stereotyped on the *warmth* dimension (less warm), while still being valued on the competence dimension (equally competent). In comparison, those only environmentally active on a *private* level (e.g., organic purchase, recycling, water & energy saving) were valued on both dimensions. Moreover, the preferences for a more moderate and conciliatory pro-environmental approach also became apparent in environmentalists' discourse, as shown by emphasizing a more concessional (*yes-but*) argumentation style opposed to a confrontational (*yes/no*) one (Castro et al., 2016). This effect was interpreted by the authors as a social penalization of the strong and radically environmental active for challenging the social norms. Unfortunately, Castro et al. (2016) didn't include any identity factors, such as gender, to describe the fictitious individuals. Therefore, the present study extends their research by

examining the influence of multiple personal attributes of environmentalists (e.g., gender identity, race/ethnicity, political orientation) on the study participants' impressions and identification with them.

Similar to the previous findings, Swim and Geiger (2018) showed how study participants' impressions varied in dependence of the reported levels of concern expressed by members of climate change opinion groups. Participants' stereotypic associations were assessed through a number of positive and negative gendered traits (e.g., feminine: nagging, nurturing; masculine: aggressive, courageous). The authors associated masculine traits with being respected and competent, and feminine traits with being liked, as was previously revealed in another study (Fiske, 1998). Swim and Geiger's (2018) results indicated ambivalent prejudices (Fiske et al., 2002), with the most concerned environmental groups, labeled as the *Alarmed*, being associated with positive masculine and negative feminine traits, therefore this group was found respected but not liked. Groups without any concern (being labeled the *Dismissive*) were perceived negatively on traits gendered as masculine and feminine. Whereas groups with intermediate levels of concern (the *Cautious* and *Concerned*) were most liked but not respected. With these results, Swim and Geiger (2018) demonstrated the variability of stereotypes by highlighted the gendered nature and ambivalence of impressions as well as the overall association of environmental concern with femininity. Building upon these findings, the present study will not be measuring impressions based on gendered associations but through the stereotypic dimensions related to competence, sociability, and morality (Fiske et al., 2002; Leach et al., 2007).

As mentioned earlier, a prototype is a mental representation of the ideal and most typical member of a group (Rosch, 1973). In this regard, the following research has demonstrated which traits are most commonly associated by the general public to a typical environmentalist. As indicated by previously presented studies, individual's wo are concerned about the environment or engage in environmentally conscious behaviors are typically perceived by others and themselves as more feminine (Brough et al., 2016; Swim & Geiger, 2018). This association corresponds to general gender differences in regard to environmental concern and environmental risk perception, with women being overall more concerned than men (Kalof et al., 2002; Xiao & McCright, 2015). These findings, also referred to as "White male effect" (Pearson et al., 2018, pp.12431), indicate the prevalence of gender stereotypes and differences in environmental concern. All these studies have not considered examining how people react to an environmentalist with a non-binary gender identity. In general, little research has focused

on non-binary or genderqueer identities (Matsuno & Budge, 2017). As a novel approach that may contribute to gender identity research, the present study integrates the non-binary gender identity, next to the binary genders, as descriptive attribute of environmentalists and assesses people's responses to them.

On a different note, Bashir (2010) confirmed that characterizations such as "tree-huggers" and "radical activists" were perceived as representative for a *typical* environmentalist. Bashir et al. (2013) further showed that environmentalists were typically associated with militancy and eccentricity, which resulted in a reduced receptiveness towards activists and the social and behavioral changes they advocated for. Interestingly, these results were salient for environmentalists presented as typical activists, but not for *atypical* descriptions that were at odds with activist group stereotypes. These results point out that not the group membership itself influences the participants' impressions, but also the degree to which environmentalists (mis)fit presently activated group stereotypes. Continuing this line of research, the present master thesis will integrate a number of atypical profile attributes with the intention to examine if impressions towards environmentalists will improve.

With focus on the U.S. context, environmentalists are among the most politicized groups as well as typically associated with the Democratic political party and left-wing ideology (Merkley & Stecula, 2018). Furthermore, Pearson et al. (2018) identified that the public perception of environmentalists in the U.S., held by the general population and across a diversity of societal groups, included stereotypical features as being *White* and *highly educated*. When the researchers contrasted these perceptions to the reported self-identification of people from different racial-ethnic groups, results revealed that racial-ethnic minority groups (i.e., Latinos/as and Asian Americans) identified themselves more as environmentalists than Whites. Moreover, Pearson et al. (2018) found further misperceptions across all social groups rating *Whites* as being most concerned with the environment, when they were found among the groups that reported the least environmental concern. The tendency to (self-)stereotype, misperceive, and underestimate low-income and underrepresented groups' environmental concern as well as identification with environmentalists, when actually being most concerned and vulnerable to negative environmental impacts, is referred to by Pearson et al. (2018) as *environmental belief paradox*. As pointed out by the research group themselves, their results highlighted the need to examine the influence of participants' identity factors, such as race, ethnicity, and social class, on participants' reactions. These dimensions will be assessed and analyzed for subgroup differences in the present study.

We have given examples for how the general public perceives environmentalists, how these perceptions may vary depending on different attributes of environmentalists, and which traits are typically associated to members of this social category. Considering that these perceptions are mostly negative, they represent possible reasons for why people refuse to identify with environmentalists or to participate in pro-environmental behaviors, as well as why environmentalists might hold back to engage and advocate publicly. In the following section, we want to point to research that tried to identify ways to reduce these negative perceptions.

2.3. When are environmentalists seen less negatively?

As mentioned earlier, Pearson et al. (2018) introduced the *environmental belief paradox*, according to which those who are most concerned about and affected by environmental issues (e.g., underrepresented populations in the U.S.) are perceived by the general public as least caring and engaged with pro-environmental topics. In the same study, Pearson et al. (2018) showed how this paradoxical association was reduced by exposing diverse participants to images and descriptions of racially diverse (vs. non-diverse) environmental organizations. The authors explained this effect through the presence of diversity cues as enhancing the perceptions of inclusion and belonging among the underrepresented study participants (Purdie-Vaughns et al., 2008). Moreover, with these results Pearson et al. (2018) point to the importance of identity based normative messages. Building on these findings, the present study will examine if the representation of diverse environmentalists elicits distinct reactions among different participant subgroups. We will extend the knowledge by matching identity dimensions (i.e., race/ethnicity, social class, and political orientation) of participants and environmentalists.

Other research showed that presenting participants with "atypical" portrayals of environmentalists contradicting existing stereotypes (e.g., being pleasant and approachable instead of militant and eccentric) resulted in more positive responses and an increased willingness to affiliate with them (Bashir et al., 2013). Understanding these results from the perspective of dual-process theories, an "atypical" environmentalist may have caused greater and distinct information processing from the individual attributes and was therefore evaluated more positively. A framework capturing dual-processes is the *continuum model of impression formation* (Fiske & Neuberg, 1990). This motivational approach, based on social categorization processes (Tajfel & Turner, 1979), explains how impressions are established within a continuum of category-based processing to individuating processes. Determined by the perceiver's attention and interpretation processes as well as elicited through given information

and motivations, attribute-by-attribute processing is activated. Moreover, the biased processing of atypical information and impression formation of such portrayals is also explained through social cognition theories of stereotype strength (Allen et al., 2009) and stereotype incongruency (Sekaquaptewa & Espinoza, 2004). While the strength of stereotypes is preserved through stereotype-consistent information, stereotype-inconsistent information receives more attentional focus and may decrease the stereotype strength. Furthermore, these information processing biases may vary depending on the targeted social group (Sekaquaptewa & Espinoza, 2004). Until now, impression formation processes have not been examined in regard to people's perceptions of environmentalists. While the limited scope of the present study does not allow to measure information processing, we will approximate this line of research by examining the effects of stereotype-consistent and -inconsistent attributes on participants' impressions.

As pioneers in this approach, Stenhouse and Heinrich (2019) measured participants' willingness to associate with climate activists portrayed through changing stereotype-consistent and -inconsistent personal attributes. By presenting numerous profile variations, the authors tested many attribute factors simultaneously through the application of a conjoint experiment. Stenhouse and Heinrich (2019) found the largest effects corresponding to the activists' perspectives on climate change, how often they pressured others, gun control views, and party affiliation. They concluded that climate activists should be portrayed as nonmilitant and as friendly as possible in order to increase the attraction perceived by the general public. Further, they found different responses related to participants' political party affiliation. However, Stenhouse and Heinrich (2019) included a large number of different attribute traits without reporting the estimations of an appropriate power analysis. Moreover, they only measured participants' party identification and not the influence of a number of other social identity dimensions. Another limitation of their study were the meager textual profile descriptions that lacked realness and detail.

By integrating findings from the previously presented literature, the present thesis project aims at analyzing patterns of public impressions through measuring their perceptions of environmentalists' competence, sociability, and morality. Additionally, we will newly assess perceptions of profiles' typicality as environmentalist and participants self-identification with them. In this, we aim for an intersectional approach integrating within a common framework several identity dimensions of environmentalists as well as the influence of the perceiver's own identity and group membership(s). Building on the study by Stenhouse and Heinrich (2019), the implementation of a conjoint analysis via a multidimensional rating experiment will allow us to test a large number of interacting identity factors, while guaranteeing an adequate

statistical power and sample size. Through this novel approach we will contribute to the stereotype literature on public impressions of environmentalists, particularly by integrating identity dimensions that have yet to receive more attention in research (e.g., non-binary gender identity). Further, we will extend the knowledge on prototypical representations of environmentalists. Additionally, our findings will clarify sources of influence and identification with the environmental movements and provide implications on how to increase member diversity and public support will be provided.

2.4. Present study

As pointed out earlier, people's impressions and stereotypes of environmentalists vary according to different factors, such as their labels, attribute traits, or behaviors (Bashir et al., 2013; Castro et al., 2016; Klas et al., 2019; Swim & Geiger, 2018). Through incorporating and analyzing multiple relevant identity dimensions of environmentalists (e.g., gender, social class, race/ethnicity, political orientation etc.) and their intersections with participants' characteristics, this study takes on an intersectional approach (American Psychological Association, 2017). Due to our aim of examining a large number of identity factors as well as the often-ambiguous nature of impressions and stereotypes, the following research questions will be guided only by a few directional hypotheses related to previous empirical evidence. In order to conduct a one-by-one examination of multiple factors, we apply an experimental (with systematic variation and randomization) approach – a so-called *conjoint experiment* (Hainmueller et al., 2014). Moreover, conjoint analyses allow to combine directional expectations for some attributes as well as an exploratory approach for others. Therefore, directional hypotheses are derived for some, but not all, research questions.

Expanding the research by Stenhouse and Heinrich (2019), our study presents participants with diverse and complex descriptions of environmentalists through changing attributes and measuring their impressions on the dimensions of competence (i.e., competent), sociability (i.e., friendly), and morality (i.e., trustworthy; Fiske et al., 2002; Leach et al., 2007). Moreover, we will measure the environmentalists perceived typicality, since some of them have been perceived more or less typical (Bashir, 2010; Bashir et al., 2013; Castro et al., 2016). Further, we will assess participants' self-identification with environmentalists as it is related to pro-environmental attitudes (Brick & Lai, 2018). With the novel application of these measures within a conjoint analysis, we aim at providing new insights on attribute-specific impressions which may help to identify the dimensions that would improve intergroup relations.

Research Question 1: Thus, which attribute values…

a) elicit more positive and negative impressions (e.g., competence, sociability, and trustworthiness)?

b) are considered more typical of environmentalists?

c) elicit more self-identification of participants with environmentalists?

In particular, we expect that environmentalists who are women and White will be perceived both highly sociable and competent, while Asians, men, and high-status occupations will be rated competent but not sociable (H1.1a). Regarding environmentalists' actions, we expect descriptions of the more radical ones to be perceived less sociable but just as competent, while the environmentalists with private pro-environmental behaviors will be judged more sociable and just as competent (H1.1b). Generally, environmentalists that could be perceived as eccentric or confrontational will be judged negatively (H1.1c).

Furthermore, we expect those female White environmentalists with a middle social status, a liberal political orientation, and more radically active will be perceived more typical as environmentalists (H1.2). Further, we expect that participants will most likely identify themselves with environmentalists that show private pro-environmental behaviors (H1.3).

Extending prior knowledge on the effect of *atypical* environmentalists (Bashir et al., 2013), this thesis will examine the effects of describing environmentalists through stereotype-inconsistent attributes (Allen et al., 2009). Hence, stereotype-consistent attributes will be those identified in the literature as typical traits of environmentalists. Thus, any other traits we consider atypical/stereotype-inconsistent.

Research question 2: Does the presentation of environmentalists' descriptions with stereotype-inconsistent (vs. stereotype-consistent) attributes increase positive impressions and identifications with environmentalists?

Similar to Bashir et al.'s (2013) results, we expect to find positive effects across all dependent variables through the inclusion of stereotype-inconsistent attributes (H2).

Not considering findings related to ingroup favoritism as well as people's preferences towards shared attributes and identity with their ingroups (Brewer, 2007), prior environmentalist stereotype research missed to examine (or only partially examined) the influence of perceivers' own identity on their perceptions (Bashir et al., 2013; Pearson et al., 2018). By examining the role of participants' social identity, regarding their self-identification as environmentalist as well as self-assessed social class, racial-ethnic background, and political orientation, this study will extend Stenhouse and Heinrich's (2019) findings on the influence of participants' party identification on their responses.

Research question 3: Hence, how do the participants' own characteristics (i.e., self-identification as environmentalist and socio-demographic attributes) influence their perceptions of and self-identification with environmentalists?

We expect those participants considering themselves environmentalists (vs. those that don't consider themselves environmentalists) will generally perceive the described environmentalists more positively (H3.1). Further, participants will have better impressions of environmentalists according to their shared socio-demographic attributes; social class (H3.2a), race/ethnicity (H3.2b), and political orientation (H3.2c).

The presented research questions and hypotheses will be examined with a sample of U.S. residents. Therefore, the present study will provide new insights into the perceptions of environmentalists in the U.S. The following chapter will outline the empirical part of the present study.

CHAPTER 2

Empirical part

To investigate the complexity of stereotypes towards *environmentalists* as well as the interplay of and ascriptions to different diversity dimensions, the given research questions were examined through the application of a *conjoint analysis*. In the following section we will provide a brief introduction to conjoint analysis. Then, we will detail how this novel method was integrated in the present study. Last, we will report the results of our analysis.

3.1. Conjoint analysis

Originally developed by Luce and Tukey (1964), conjoint experimental designs have been traditionally applied in marketing research but recently introduced to political science as well (e.g., Carey et al., 2020; Doherty et al., 2019; Knudsen & Johannesson, 2019). Applied to psychological research, this approach allows to investigate people's responses to a multitude of complex and interacting influences. Similar to vignettes, conjoint designs describe a product or person, in the following referred to as *profile*, based on the different characteristics presented to respondents in a table format. For most recent conjoint experiments, "each stimulus consists of a two-column table that profiles two individuals, with the rows of the table corresponding to different attributes of the person" (Stenhouse & Heinrich, 2019, p.344). *Attributes* refer to the name of features or characteristics that describe the profiles, consisting of *levels* or *values* representing the different choices for each attribute (Qualtrics XM support, 2021). The two profiles are generated completely at random assigning "a value for each attribute, and the order of attributes randomized as well" (Stenhouse & Heinrich, 2019, p.344). In a conventional experimental approach in psychology, different experimental conditions are presented to participants or separate groups. However, in conjoint experiments fully randomized attribute orders and values are presented to each individual participant (Stenhouse & Heinrich, 2019). Hence, this method does not require experimental participant subgroups or separate conditions.

Being a multidimensional choice or rating experiment, this method allows a fully randomized factorial and between-subjects design that simultaneously tests the influence of various factors on participants' evaluations of environmentalists' profile descriptions. These evaluations are used to calculate the participants' impressions and tendencies within individual profile attributes as well as group differences between the participants (Leeper et al., 2020). Moreover, since the application of a conjoint analysis permits a one-by-one examination of the

examined effects, combining directional hypotheses as well as exploratory questions, this method proves to be the appropriate fit for our research questions. Its novel application to peoples' impressions towards environmentalists contributes to the stereotype literature on public impressions. Moreover, this approach may advance impacts of environmental movements through an improved understanding of diversity issues necessary to be addressed to increase member diversity and public support.

In summary, conjoint analysis has shown to be a functional, practical, and efficient method that has not yet received adequate attention in psychological research. For more information on the statistical analysis of conjoint designs, the assumptions of a conjoint analysis, and the method's strengths and benefits, please see Annex A. In the following part, the application of the conjoint analysis in the present study will be described in detail.

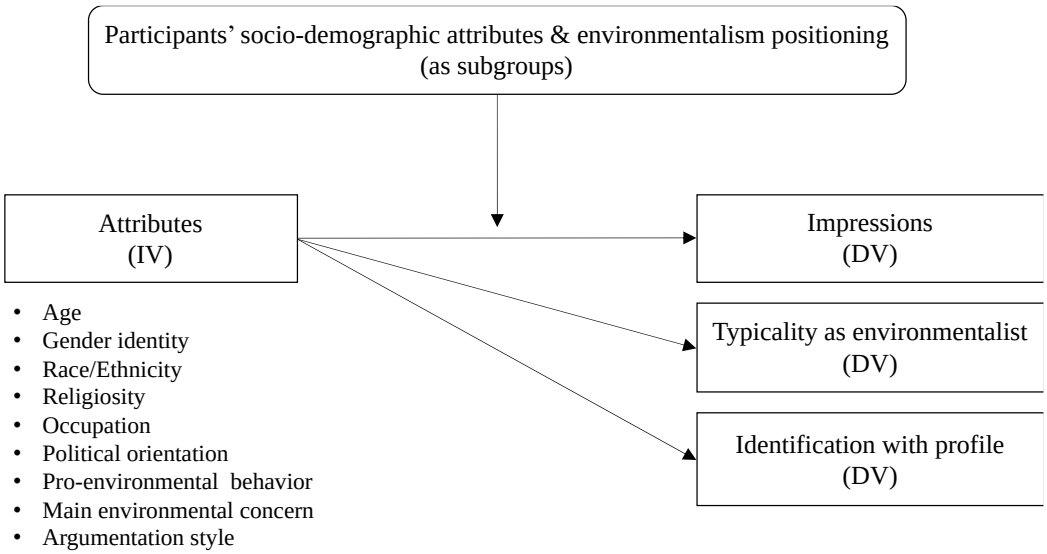
3.2. Method

3.2.1. Research design

The applied conjoint analysis was set up following a traditional design with rating tasks constructed and administrated within a 25-minute online questionnaire on the Iscte – Instituto Universitário de Lisboa Qualtrics survey platform (*Qualtrics*, 2005). It consisted of the tabular presentation of eight environmentalists' profiles including nine descriptive attributes on given categories randomly ordered and values selected from a pool of possible attribute levels which were then rated regarding participants' impressions, their perceived typicality as environmentalists, and the participants' self-identification with them. Figure 3.1 shows the profile attribute values representing the independent variables (IV), while the participants' evaluations were assigned as dependent variables (DV). For a traditional experimental setup, the factorial structure for the independent variables would consist of a 3 x 3 x 3 x 4 x 3 x 3 x 3 x 2 x 2 (multiplied attribute values) design including a total of 11,664 experimental conditions. In turn, the application of a conjoint experiment allowed to test for all these factors within one experimental condition with a substantially reduced sample size. Aside from the conjoint variables, participants' socio-demographic data and their attitudes regarding environmentalism were recorded and analyzed for subgroup differences. The research was approved by the local ethics committee at Iscte and pre-registered on the website AsPredicted.org.

Figure 3.1

Study model



Note. Simple model structure indicating the influence of environmentalists' profile attribute on participants' impressions (warmth, competence, morality), typicality perception, and self-identification, further analyzed based on participant subgroups.

3.2.2. Participants

For the present research project as a continuation of research with segments of the population in the U.S. (Pearson et al., 2018), a target sample of U.S. residents at least 18 years old (participation requirements) was recruited. Overall, participants were desired with diverse backgrounds representing different subgroups relevant to the U.S. context (e.g., social status, racial-ethnic majority vs. minority, political orientation). Based on sample size recommendations and model-based statistical power calculations for conjoint designs (Stefanelli & Lukac, 2020), a minimum of N = 620 participants were needed to achieve statistical power (1 – ß = .80). To reach this large sample size, participants were recruited through snowball sampling by convenience in social media groups (i.e., Facebook, Instagram, LinkedIn), free survey exchange websites (i.e., SurveyCircle.com), and private social and academic networks[2]. Participants had the option of qualifying to win a $50 gift certificate. Additionally, to meet the required sample size, participants were recruited through the Amazon Mechanical Turk (MTurk) crowdsourcing platform following recommendations on research with MTurk and Qualtrics (Black, 2021). The survey was posted by and accessible for MTurk

[2] Social media and Amazon MTurk recruitment text in Annex B.

workers through a HIT (*Human Intelligent Task*, see HIT message in Annex B). To prevent respondents from taking the survey unconscientiously, participation qualifications and control questions were integrated in the HIT and Qualtrics survey. Based on payment recommendations (Black, 2021), MTurk respondents received $2 for their completed participation.

Using Iscte Qualtrics platform, between April 13th and May 20th 2021, the survey link was opened 1452 times, but n = 540 participants did not complete the main part of the survey. In another n = 231 cases, participants failed to complete at least two of the three attention checks, took less than 300 seconds (=5 minutes) to complete the survey, or showed significant differences to the survey participants who fulfilled the inclusion criteria. n = 3 cases had to be excluded from data analyses because they were recorded without the relevant conjoint table data.

A final of N = 678 participant responses remained for the statistical analysis. n = 364 (53.7%) participants were recruited through convenience sampling and n = 314 (46.3%) through Amazon MTurk. The mean age of the participants was M = 34.26 years with a standard deviation of SD = 12.16 and a range from 18 to 85 years. Responding to the question "Which gender do you identify with?", n = 317 (46.8%) selected or specified "woman" or "female", n = 352 (51.9%) "man" or "male", n = 3 (0.4%) "agender" or "nonbinary", n = 1 (0.1%) "prefer not to say", and n = 5 (0.7%) didn't respond. Hence, the female-male gender ratio was nearly balanced. Based on a rating scale from 1 (Not religious at all) to 7 (Very religious) participants' mean level of religiosity was M = 3.89 (SD = 2.20) and on a scale from 1 (Strongly liberal) to 7 (Strongly conservative) participants' mean political orientation was M = 3.65 (SD = 1.86). Table 3.1 shows the distribution of other socio-demographic data of which some was analyzed for subgroup differences in participants' responses.

Table 3.1

Socio-demographic data with sample sizes and percentages.

	Sample size and percentage of participants	
	n	*%*
Race / Ethnicity *		
White / Caucasian	503	74.2
Black or African American	65	9.6
Hispanic or Latino	52	7.7
Asian or Asian American	32	4.7
Middle Eastern	1	0.1
American Indian or Alaska Native	9	1.3
Multi-ethnic / multiracial (accumulated)	15	2.2
Prefer not to say	1	0.1
Self-assessed social class *		
Lower class	92	13.6
Middle class	525	77.4
Upper class	61	9.0
Yearly household income		
Less than $10,000	31	4.6
$10,000 - $29,999	84	12.4
$30,000 - $49,999	148	21.8
$50,000 - $69,999	136	20.1
$70,000 - $89,999	88	13.0
$90,000 - $119,999	65	9.6
$120,000 - $149,999	42	6.2
$150,000 - $179,999	27	4.0
$180,000 - $209,999	13	1.9
More than $210,000	30	4.4
Didn’t respond	14	2.1

Note. Total sample size N=678; n=Subsample size; *=Variables analyzed for subgroup differences; Data of the sub-sample sizes n und percentage (%) of the sample size N.

3.2.3. Procedure

The participants took part in the study survey online on the Qualtrics platform. The complete questionnaire can be viewed in Annex D. When accessing the survey link, participants were first welcomed and then presented with the term definition of Environmentalists, also repeated multiple times throughout the survey (see literature review). Then, they reviewed and responded to the informed consent. If they decided not to participate or didn't fulfil the eligibility criteria the survey immediately ended. Before the main part of the study, participants were asked to indicate their social class and describe their racial and ethnic origin. This question order was originally intended to apply quotas restricting the size of certain participant subgroups. Due to recruitment difficulties, we decided against the use of quotas but couldn't change the survey flow.

For the main part, participants were given a brief introductory message asking them to imagine meeting the environmentalists described to them in the following. They were instructed to read the described details carefully and to pay attention to the integrated attention checks that would have to be answered correctly. Next, participants were presented with four separate conjoint modules. Each module consisted of one conjoint table with two fictitious environmentalist profile descriptions (IVs) followed by three rating tasks (DVs). Every conjoint table (see Figure 3.2) included nine profile attribute categories with their order and attribute values randomly selected from a pool of values.

Figure 3.2

Example conjoint table describing two environmentalists (A and B)

	Environmentalist A	Environmentalist B
Main environmental concern	Global environmental problems (e.g., climate change, depletion of the ozone layer, destruction of wildlife and forests, droughts & floodings)	Global environmental problems (e.g., climate change, depletion of the ozone layer, destruction of wildlife and forests, droughts & floodings)
Age	64	42
Type of pro-environmental behavior	Writes political representatives on environmental regulation issues. Signs petitions on environmental protection. Promotes pro-environmental behaviors to family and friends and by sharing information through social media.	Actively involved in environmental protection groups. Frequently participates in demonstrations, civil disobedience, or other direct actions aiming to influence environmental politics.
Occupation	Cleaner	Corporate CEO
Religiosity	Moderately religious	Not religious
Race/Ethnicity	Black/African American	Hispanic/Latinx
Argumentation style	We are already doing something positive, but we also need changes from large economic groups.	We are already doing something positive, but we also need changes from large economic groups.
Gender	Woman	Man
Political orientation	Moderate	Moderate

After the conjoint tables, participants were given the following instructions: “When we meet a new person we tend to form a first impression, even if we do not have much information about them. Now, please rate intuitively the following impressions you have of each described environmentalist as if they were real individuals you are meeting in person. There are no right or wrong answers (except for the attention checks).” These instructions were repeated in every module before the rating tasks. Next, participants evaluated each environmentalist’ profile (A and B) on the outcome measures. Attention checks were integrated at different locations (i.e., “This is an attention check. Please click "Strongly agree"”). After the four conjoint modules participants were questioned regarding their own stand in environmentalism. Then, socio-demographical questions and a block with optional questions followed. Lastly, participants were fully debriefed and had the option to leave comments as well as sign up for the draw of the gift certificate (not MTurk workers).

3.2.4. Materials

The data collected through the survey represented the independent, dependent, and subgroup variables of the investigated model. The given experiment consisted of four conjoint tables describing a total of eight environmentalists’ profiles through nine attribute categories as independent variables (IVs) and five rating tasks to capture participants’ impressions (on the dimensions of competence, sociability, and morality), typicality of environmentalists, and self-identification with the profiles as dependent variables (DVs). Furthermore, socio-demographic data, as well as environmental standpoint and optional identity variables (described in the following) were assessed for subgroup analyses. The online survey was developed and executed in the licensed Iscte Qualtrics version, using HTML and JavaScript coding to create the conjoint experiment[3]. The full questionnaire with the exact questions and measures can be viewed in Annex D. In the following we will outline the applied stimuli as independent variables (IVs), the measures as dependent variables (DVs), and participants’ variables for subgroup comparisons.

3.2.4.1. Stimuli. The given profile attributes and attribute values[4] were selected based on previous research related to stereotypes of people who engage in pro-environmental behaviors

[3] See Annex C for snapshots of the Qualtrics window with the HTML and JavaScript coding. Please contact the author for the full code. E-Mail: karolin.kibele@yahoo.com

[4] For clarification, *Attributes* refer to the name of features or characteristics that describe the profiles. These attributes consist of *levels or values* representing the different choices for each attribute.

or who are referred to as environmentalists (see literature review). To stimulate and facilitate the imagination of the environmentalists as real people, the integrated attribute categories describing the profiles were *Age*, *Gender identity*, *Race/Ethnicity*, *Occupation*, *Religiosity*, *Political orientation*, *Type of pro-environmental behavior*, *Main environmental concern*, and *Argumentation style*. Due to design restrictions imposed by statistical power calculations (Stefanelli & Lukac, 2020), the maximum number of values per attribute was limited to four. The selected values aimed at providing stereotype-consistent as well as stereotype-inconsistent descriptions. The full text of the profile attributes and their values are provided below in Table 3.2 and for an example of the integrated conjoint table see Annex D, Figure D13.

Age and Gender identity. Three age and gender identity values were included representing different social groups in U.S. society. The "non-binary" gender identity has so far not been investigated in environmentalist stereotypes literature and, thus, will provide valuable insights.

Race/Ethnicity and Occupation. As reviewed previously, traits related to race, ethnicity, and socio-economic status are relevant dimensions associated with existing public perceptions of environmentalists (Pearson et al., 2018). Unfortunately, due to sample size considerations and power, only the four largest racial and ethnic groups in the U.S. could be included (US Census Bureau, 2019). Occupation was chosen to represent socio-economic status and to avoid random combinations of multiple socio-economic variables, that could have resulted in unrealistic profile descriptions (e.g., a doctor with only a high-school degree) and possibly confusing participants (Hainmueller et al., 2014).

Religiosity and Political orientation. Religion or religiosity has not yet received much attention in environmentalists stereotype literature but is an important factor regarding social identity in the U.S. (Arbuckle, 2017). Again, to avoid unusual attribute combinations we chose to include three levels of religiosity instead of religious affiliation. Moreover, political orientation was incorporated with three values as one of the most important and divisive influences on U.S. residents' opinions regarding environmentalism (Merkley & Stecula, 2018).

Type of pro-environmental behavior and Main environmental concern. People's understanding and impressions of environmentalists vary in regard to the types of pro-environmental behaviors they present (see literature review). Therefore, describing environmentalists with three behavioral options aimed at eliciting different reactions. Furthermore, diverse people have different environmental concerns and therefore might align more with global or local concerns (Mohai & Bryant, 1998).

Argumentation style. Operationalized by previous research, environmentalists' discourse can have radical and moderate argumentative styles (Castro et al., 2016; Uzelgun et al., 2015).

We included environmentalists' argumentation style through two messages using either a moderate and concessional discourse of "yes-but" indicating something important is already being done, but it is not enough, or a more confrontational and non-compromising discourse of "no-no" indicating that nothing is being done.

Table 3.2

Full text of all profile attributes (variables) and attribute values (levels).

Attribute	**Value**
Age	23
	42
	64
Gender identity	Woman
	Man
	Non-binary
Race / Ethnicity	White
	Black/African American
	Hispanic/Latinx
	Asian
Occupation	Office clerk
	Corporate CEO
	Cleaner
Religiosity	Not religious
	Moderately religious
	Very religious
Political orientation	Liberal
	Moderate
	Conservative

Note. The top value displayed for each attribute is the stereotype-consistent value which will later be used as reference level for the AMCE calculations.

Table 3.2 (continued)

Full text of all profile attributes (variables) and attribute values (levels).

Attribute	Value
Type of pro-environmental behavior	Actively involved in environmental protection groups. Frequently participates in demonstrations, civil disobedience, or other direct actions aiming to influence environmental politics.
	Writes political representatives on environmental regulation issues and signs petitions on environmental protection. Promotes pro-environmental behaviors and shares information with family, friends, and through social media.
	Prefers purchasing environmentally friendly goods, such as local organic food, or recycled products. Separates garbage at home and uses (natural) resources responsibly, like avoids wasting food, energy, or water, or drives less by car.
Main environmental concern	Global environmental problems (e.g., climate change, depletion of the ozone layer, destruction of wildlife and forests, droughts & floodings)
	Neighborhood environmental problems (e.g., too much trash & noise, lack of access to natural areas or grocery stores, proximity to polluting industrial sites)
Argumentation style	What we are doing is not enough. We need fundamental changes from large economic groups.
	We are already doing something positive, but we also need changes from large economic groups.

Note. The top value displayed for each attribute is the stereotype-consistent value which will later be used as reference level for the AMCE calculations.

3.2.4.2. Measures. After being presented with the conjoint tables containing the above explained stimuli, participants were asked to rate their impressions of the described environmentalists on 7-point Likert-scales (1 = Strongly disagree, 2 = Disagree, 3 = Somewhat disagree, 4 = Neither agree nor disagree, 5 = Somewhat agree, 6 = Agree; 7 = Strongly agree). As per usual for conjoint experiments (Hair, 2014), the participants' impressions were measured using single-item constructs. The exact measures as integrated in the questionnaire can be viewed in Annex D.

Stereotypical impressions. Participants' impressions were captured on the dimensions *Competence* and *Sociability* from the framework of the SCM (Fiske et al., 2002), and *Morality* (Leach et al., 2007). The participants of this study were asked to rate how much they agree or disagree that the environmentalists ascribed by the presented profiles are *friendly*, *competent,* and *trustworthy*. For an example of the questions presented after each conjoint table for each environmentalist's profile see Annex D, Figure D13.

(Proto)Typicality and Self-Identification. Participants were asked how much they agree or disagree that the presented profiles are *typical* environmentalists as well as how much they agree or disagree that they can *identify themselves* with them.

Environmentalism, Socio-demographic data, and Other identity variables. With the purpose of conducting subgroup comparisons to estimate differences based on participants' identity dimensions, participants were asked regarding their different standpoints in environmentalism, socio-demographic data, and other group memberships. Their standpoint in environmentalism was assessed through the degree of *describing themselves an environmentalist*, *level of personal concern about environmental problems*, *pro-environmental behaviors integrated in their life*, and *if / which environmental problem is more important*. For the analysis, we later grouped participants into "Environmentalists" (n = 553) and "Not environmentalists" (n = 125) according to their degree to which they considered themselves as such.[5]

The assessed socio-demographic questions concerned the participants' self-assessed social class, race/ethnicity, age, gender identification, religious affiliation, religiosity, education, yearly household income, and political orientation. For the purpose of subgroup comparisons, we grouped participants into U.S. context specific "Racial-ethnic minority" (n = 173) and "Racial-ethnic majority" (n = 503) categories (n = 2 "preferred not to say"), and into "Liberal"

[5] "Strongly disagree" to "Neither agree nor disagree" = Not environmentalists, "Somewhat agree" to "Strongly agree" = Environmentalist

(n = 221), “Moderate” (n = 310), and “Conservative” (n = 142) according to their political orientation (n = 5 did not indicate)[6].

Additionally, other identity variables were assessed regarding participants *region of residence in the U.S.*, *identification as global citizen*, and other group-identifications intending to capture participants’ *identity complexity*. Due to the limited scope of thesis, the analyses of these variables for additional subgroup comparisons could not be conducted.

3.2.5. Statistical Analyses

The collected data were exported and stored securely on a shared online drive accessible only to the main investigators. The datasets were merged and prepared in the statistical program SPSS version 27.0 (IBM Corp, 2020). Preparations included removing variables irrelevant to the main analysis, statistically comparing sample subgroups for significant differences, excluding invalid or extreme cases from the main analysis, as well as transforming the dataset from a “wide” to a “long” format [7], and recoding the variables needed for conducting the main statistical analysis in R (R Core Team, 2020).

All research questions were approached through the execution of the conjoint analysis with the prepared and transformed dataset in the **cregg** package (Leeper, 2020). This package can be used for “Simple tidying, analysis, and visualization of conjoint (factorial) experiments, including estimation and visualization of average marginal component effects ('AMCEs') and marginal means ('MMs') for weighted and unweighted survey data, along with useful reference category diagnostics and statistical tests.” (Leeper, 2020). Hainmueller et al. (2014) recommended to check if the assumptions for conjoint analyses were met (see Annex A). Therefore, we conducted diagnostic checks for each of the three assumptions. Furthermore, external validity was guaranteed in advance through the prior consideration of attributes that could cause unusual profile combinations and the generated randomization code in Qualtrics that prevented unintended attribute order effects. The following estimates resulting from the analyses helped us assess the participants’ impression patterns on the rated outcomes (*Competence, Friendliness, Trustworthiness, Typicality,* and *Identification*).

---

[6] Racial-ethnic majority = White; Racial-ethnic minority = Black or African American, Hispanic or Latino, Asian or Asian American, American Indian or Alaska Native, Native Hawaiian or Pacific Islander, multi-ethnic / multiracial; Liberal = 1-2, Moderate = 3-5, Conservative = 6-7

[7] Having the dataset in a long format means that the rows/cases no longer represent individual participants (*N* = 678) but rather the presented individual environmentalist profiles; eight per participant (678 x 8 = 5424). For this reason, we will see large degrees of freedom in the following results.

To answer the first research question about which attribute values elicit more positive (and negative) evaluations on the given outcome variables, Marginal Means (MMs) were calculated for each attribute value. MMs indicated the average ratings across all participants for each value marginals across all profile attributes. Hence, providing estimates and patterns of participants' impressions as suggested by Leeper (2020). Additionally, we formally tested for differences within one attribute category (between the attribute values' MMs) by running omnibus *F*-tests using nested model comparisons. Unfortunately, the cregg package (Leeper, 2020) did not provide the option of multiple comparisons for more than two levels/values. Hence, we could not estimate the differences between attribute values of the same category.

For the second research question, asking if the presentation of stereotype-inconsistent attribute values increases positive evaluations, we calculated the Average Marginal Component Effect (AMCE). AMCEs indicate the effect sizes of each attribute value within and relative to its attribute category. The AMCE values are calculated through the differences between all marginal means of one attribute category averaged by the marginal mean of the reference value. For this, we applied stereotype-consistent values (e.g., young, female, radical, etc.) as reference for the AMCE calculations. Hence, the AMCEs provided patterns of participants' impressions relative and conditional to the selected reference values as baseline for each conjoint attribute. Moreover, their confidence intervals (CIs) indicate if there is a significant difference between stereotype-inconsistent and -consistent values.

To answer the third research question of how the participants' own characteristics influence their evaluations, participant subgroups were compared based on their standpoint in environmentalism and three socio-demographic attributes. As recommended by Leeper et al. (2020), we performed omnibus *F*-tests for whether there were any differences between subgroups across all profile attribute values, using nested model comparisons[8]. We conducted these tests with participant subgroups distinguished by their identification as environmentalist, self-assessed social class, racial-ethnic identification, and political orientation (see Measures). As mentioned earlier, the limited analyses options of the R package did not provide the option for testing contrasts. Hence, we could not estimate the individual differences between two

[8] The analysis takes a "reduced" model (estimating only marginal effects of the features) and generates a "full" model (the reduced model with additional interactions between the subgrouping covariate and all features) with two-way interactions between the variables specified by subgroup and all variables in formula, then computes an *F*-test comparing the two models, providing a test for whether preferences vary across values by subgroup. This is, in essence, a test of whether all such interaction coefficients are distinguishable from zero (Leeper, 2020).

subgroups. Hence, we could only compare "Environmentalists" and "Not environmentalists" as well as between "Racial-ethnic minority" and "Racial-ethnic majority" through pairwise differences tests (between the marginal means of the two groups across all attribute values).

In the following, the results of the statistical analyses were reported and visualized through plots. Indications were made, if the results supported the hypotheses.

3.3. Results

The results report begins with the analyzed sample group differences. Then the results of the conjoint analysis are reported in the order of the addressed research questions. The results are presented visually by plots as well as through omnibus F-tests and pairwise comparisons. The exact numerical estimates, standard errors and z-scores can be found in Annex G. Estimates of effect sizes were not reported through the applied R package. Moreover, an overview of the descriptive statistics and correlations can be found in Annex F. Further, the assumptions for conducting conjoint analyses were met. For more details see Annex G. In the following, only significant results will be reported. As a reminder, attributes are the features or characteristics that describe the profiles. They consist of levels or values that represent the different choices for each attribute.

Testing for differences between the two sample sources, pairwise comparisons between the convenience and the MTurk sample showed differences in the dependent variables; Competence $F(18, 5388)=1.71$, $p=.03$, Friendliness $F(18, 5388)=3.77$, $p<.001$, Trustworthiness $F(18, 5388)=3.74$, $p<.001$ and Typicality $F(18, 5388)=1.87$, $p=.01$.

3.3.1. Effects of profile attributes

Figure 3.3 displays the results of the marginal means of the profile ratings for competence, friendliness and trustworthiness, and Figures 3.4 displays the results for the profiles' typicality as environmentalist and participants' self-identification with the profiles. Each graph displays dots that represent the marginal means which are the estimates for every attribute value averaged across all participants. The bars on either side of the dots are the upper and lower limits of the mean dispersion. The x-axis units are the original scale points for each dependent variable.

In Figure 3.3 tendencies are visible in the ratings of the profiles' *Competence*, *Friendliness*, and *Trustworthiness* varying in relation to the given profile attribute values within the given range ($MM_{\min} = 5.0$, $MM_{max} = 5.5$). The following tendencies were the ones reaching statistical

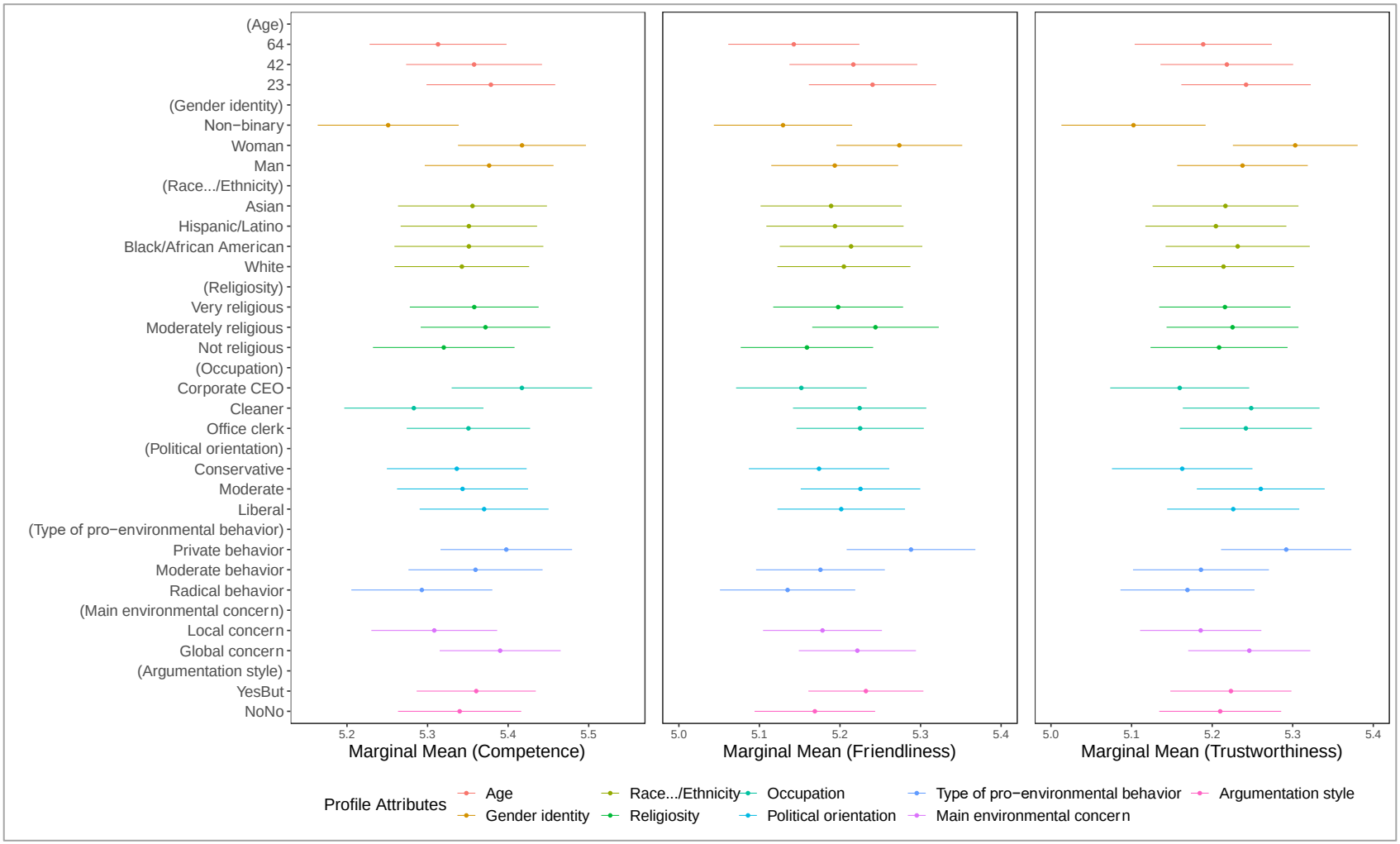
significance. For example, we observed significant mean differences between the environmentalists' age values only for the ratings of friendliness, $F(4, 5418)=3.22$, $p=.012$. The plot shows us that the younger the environmentalists the more friendly they were perceived (see Figure 3.3). Furthermore, we found highly significant differences between the environmentalists' gender identity values on all impression variables; competence, $F(4, 5418)=5.68$, $p<.001$, friendliness, $F(4, 5418)=5.86$, $p<.001$, and trustworthiness, $F(4, 5418)=7.78$, $p<.001$. The marginal mean pattern shows us women environmentalists were positively rated across all three dimensions, while non-binary environmentalists were perceived least competent, friendly, or trustworthy. Furthermore, we observed significant mean differences between the environmentalists' occupations on the dimension of competence, $F(4, 5418)=3.04$, $p=.012$. Respectively, "Corporate CEO" (i.e., Chief Executive Officer) profiles were perceived most and „Cleaner" least competent. Not statistically different but visually observable, "Corporate CEO" were seen as least trustworthy and friendly compared to "Cleaner" and "Office clerk" (see Figure 3.3). Further, political orientation showed significant differences between the attribute values only on the dimension of trustworthiness, $F(4, 5418)=3.09$, $p=.015$. The plots in Figure 3.3 show us that while liberals were rated most competent, they were not perceived as friendly or trustworthy as moderates. Moreover, conservatives were generally perceived least competent, friendly, and trustworthy. Thus, these results partially support our expectations of women being perceived very friendly and competent and that high status occupations are perceived competent but not friendly (H1.1a).

Further, we observed significant differences between the environmentalists' pro-environmental behaviors on the dimensions of friendliness, $F(4, 5418)=4.87$, $p<.001$ and trustworthiness, $F(4, 5418)=3.63$, $p=.006$. From the plot (Figure 3.3) we can understand that the more private the pro-environmental behaviors the more positively they were perceived. Thus, only partially supporting our expectations (H1.1b) that behaviors are perceived more friendly than radical behaviors.

Our expectation of radical behaviors being perceived more competent than private ones was not supported. Despite not being significantly different, we could observe from the plots that a "yes-but" (concessional) argumentation style was more positively evaluated. Thus, somewhat supporting our expectation of confrontational environmentalists being perceived more negatively (H1.1c).

Figure 3.3

Marginal Mean estimates for each attribute value on the profile ratings for Competence, Friendliness, and Trustworthiness



Note. The x-axis units are the original scale points for each dependent variable.

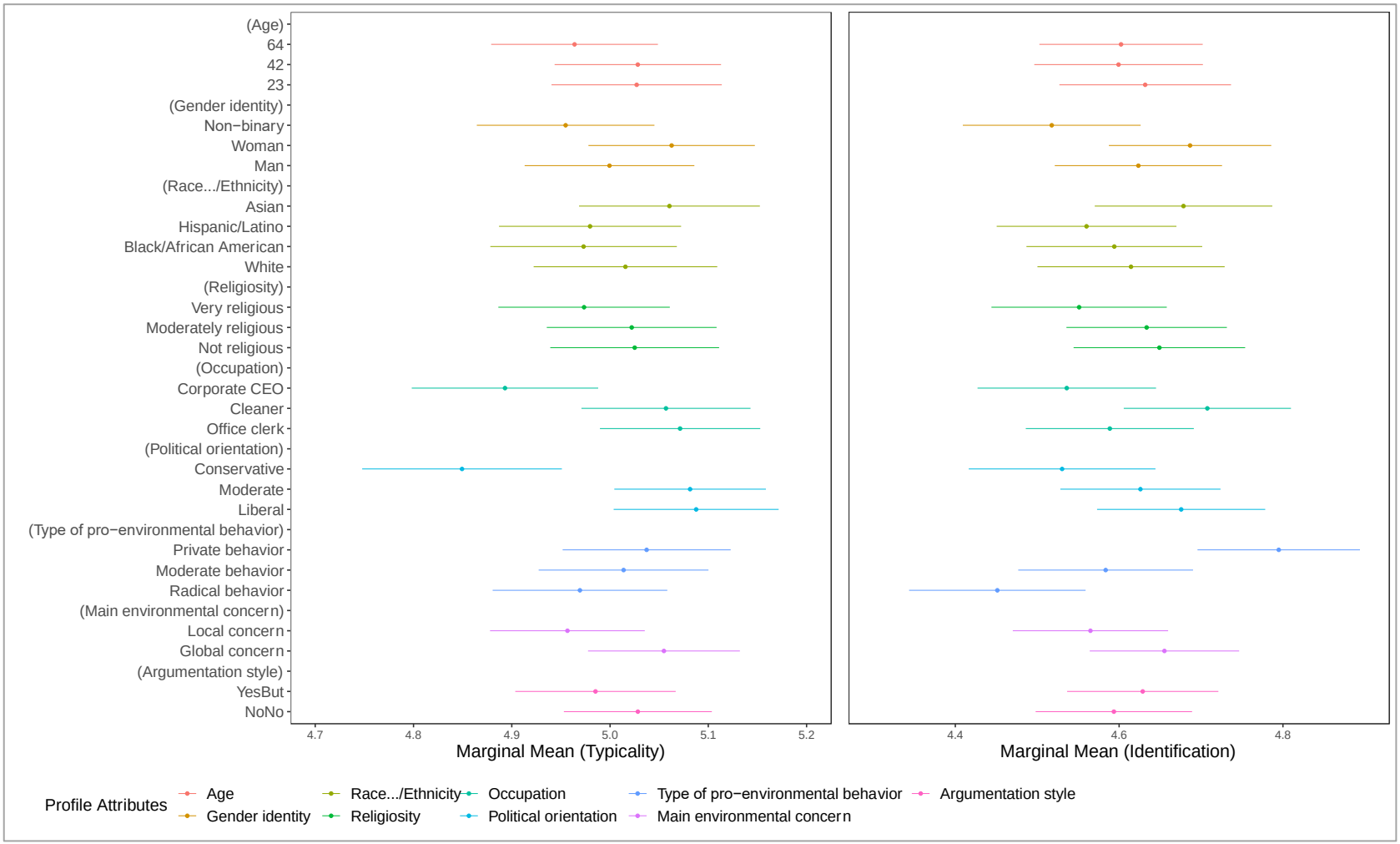
Visualized in Figure 3.4, tendencies are visible in the ratings of environmentalists' *Typicality* (MM_{min} = 4.7, MM_{max} = 5.2). and participants' Self-*Identification* with the profiles (MM_{min} = 4.5, MM_{max} = 4.9). varying in relation to the profile attribute values in the given range. The following tendencies were the ones reaching statistical significance.

Regarding participants' perceptions of the profiles' typicality as environmentalist, we observed significant mean differences between the attribute values of the environmentalists' gender identity, $F(4, 5418)=2.93$, $p=.020$ and race/ethnicity, $F(6, 5416)=2.37$, $p=.027$. The plot in Figure 3.4 visualized the tendencies of environmentalists who were a "Woman" and "Asian" or "White" being perceived as more typical. Furthermore, very significant differences were found between the profiles' occupations, $F(4, 5418)=4.59$, $p=.001$, with "Cleaner" and "Office clerk" being seen as more typical than "Corporate CEO". Also, profiles with distinct political orientations were rated highly significantly different, $F(4, 5418)=9.30$, $p<.001$, with political moderates or liberals being perceived more typical for an environmentalist. Lastly, we observed significant mean differences between the ratings of the profiles' pro-environmental behaviors, $F(4, 5418)=2.60$, $p=.034$, and main environmental concern, $F(2, 5418)=3.24$, $p=.039$. Profiles were perceived more typical as environmentalists when presented with "Private" to "Moderate behaviors" as well as when having a mainly "Global concern". Even though not statistically significant, we could observe a tendency of perceiving younger profiles and profiles with a confrontational (no-no) argumentation style more typical. Thus, these results partially supported our expectations in the way that profiles who were women, White, with a middle-class occupation (i.e., "Office clerk"), and with a liberal political orientation were perceived more typical for environmentalists (H1.2). In contrast, the fact that profiles described as Asian, with a lower-class occupation (i.e., "Cleaner"), a moderate political orientation, and private to moderate pro-environmental behaviors were seen more typical did not support our hypothesis.

Regarding participants' self-identification with the environmentalists' profiles, our results showed significant to highly significant marginal mean differences within the attributes gender identity, $F(4, 5418)=3.13$, $p=.014$, occupation, $F(4, 5418)=2.69$, $p=.029$, and pro-environmental behaviors, $F(4, 5418)=11.71$, $p<.001$. Figure 3.4 visualized that participants preferred to self-identify with environmentalists that were a "Woman", "Cleaner", and with "Private pro-environmental behavior". Thus, supporting our expectations that participants most likely identify themselves with environmentalists that show private pro-environmental behaviors (H1.3).

Figure 3.4

Marginal Mean estimates for each attribute value on the profile ratings for Typicality as environmentalist and Self-identification with the profiles



Note. The x-axis units are the original scale points for each dependent variable.

3.3.2. Effects of atypical environmentalists

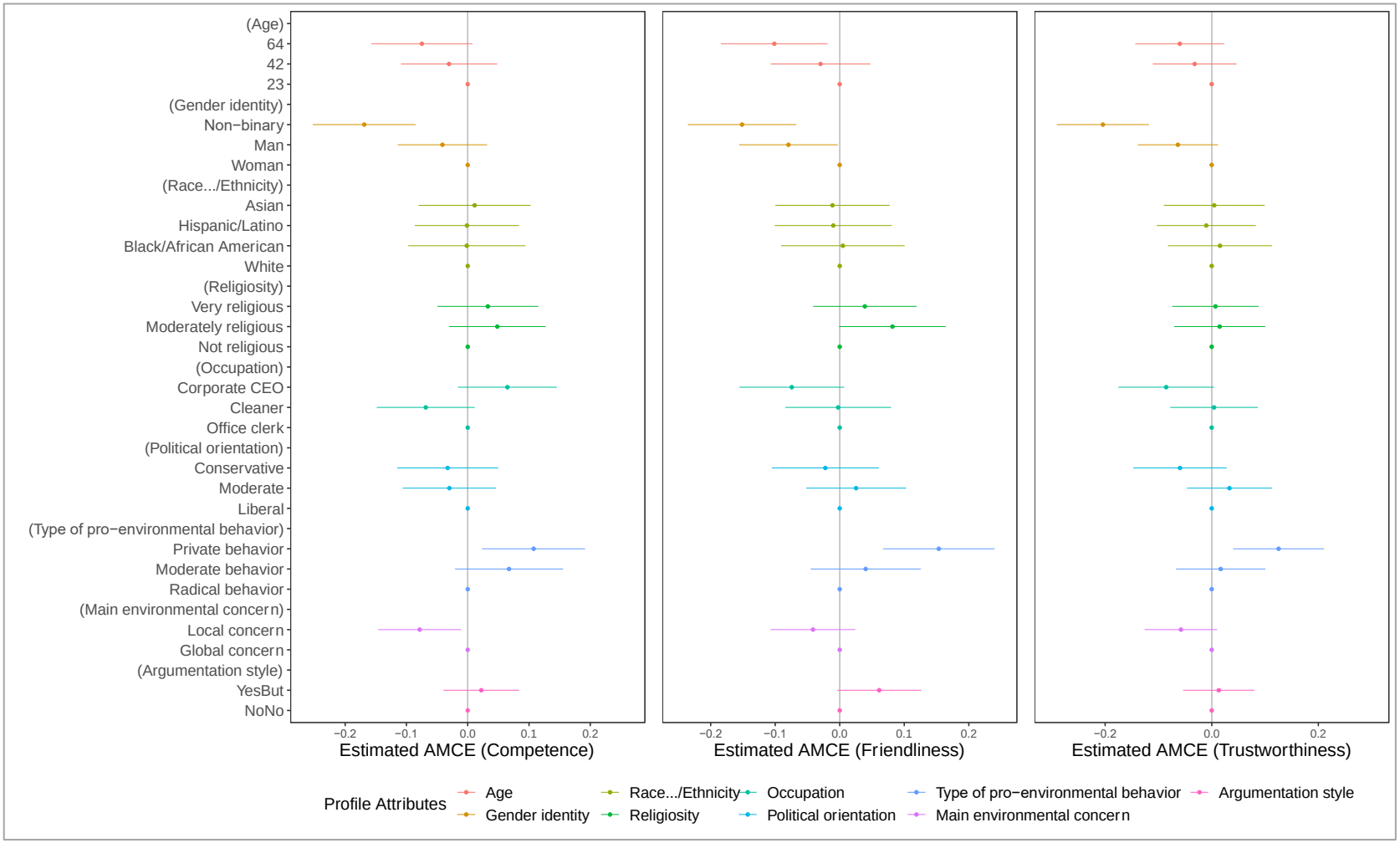
In the following, the Average Marginal Component Effects (AMCEs) are reported for each profiles' attribute value calculated for the measures of competence, friendliness, and trustworthiness (Figure 3.5), as well as the profiles' typicality as environmentalists and the participants self-identification with the profiles (Figure 3.6). Compared to the previous plots, here the x-axis units indicate the sizes of the AMCEs (not the original scale points). Moreover, the dots represent the estimated AMCEs per attribute value relative to the baseline/reference value (located on the vertical line in the plots) and the bars on either side of these dots are the 95%-Confidence Intervals (CI) for the effects. Whenever the CI does not include the x-axis' zero point, the effect of the attribute value is significantly different to the reference value. As mentioned earlier, for the purpose of this study we chose stereotype-consistent values as reference values (x-axis' zero point). Keeping this in mind, a significant effect (CI not including x-axis zero point) means a difference between how participants evaluated information consistent vs. inconsistent to existing stereotypes, with the position of the bars indicating whether the attribute value was positively or negatively evaluated. Moreover, the visualized tendencies look similar to the previous plots but differ in the way that the calculated estimates are all relative to the reference value of the given attribute category, thus can only be compared within that category.

From the calculations and visualizations (Figure 3.5, Figure 3.6) of the AMCEs we observed the following significant effects of stereotype-inconsistent attributes that were more positively evaluated by participants. For example, the occupation "Cleaner" led to higher participants' self-identification ($p<.001$) with the profiles compared to the stereotype-consistent "Office clerk" (reference value). Furthermore, we observed that profiles with pro-environmental "Private behavior" elicited higher ratings of participants' impressions reading the profiles' competence ($p=.012$), friendliness ($p<.001$), and trustworthiness ($p=.004$), relative to profiles with "Radical behavior" (stereotype-consistent reference value),. Moreover, participants' ratings of their self-identification with the environmentalists were higher when presented with profiles described by "Private behavior" ($p<.001$) or "Moderate behavior" ($p<.001$). Thus, these results only partially support our expectations (H2) that participants evaluate stereotype-inconsistent information more positively. Namely, that participants evaluated positive pro-environmental behaviors overall more positively and self-identified more with the occupation "Cleaner".

Contrary to our expectations, we observed significant negative effects indicating that participants evaluated certain stereotype-inconsistent attribute values negatively compared to the consistent stereotype information. For example, environmentalists with the age "64" (p<.001) were perceived less friendly compared to "23" year old profiles. Regarding the profiles' gender identity, "Non-binary" environmentalists were perceived less competent (p<.001), friendly (p<.001), and trustworthy (p<.001) than the reference value "Woman". Moreover, "Non-binary" profiles were rated significantly less typical as environmentalist (p<.001) and participants' identified themselves (p<.001) less with those profiles. While profiles described as "Man" were also perceived significantly less friendly (p=.041) than women. Furthermore, the occupation as "Corporate CEO" elicited significantly lower ratings in the profile's typicality (p<.001) as environmentalist compared to the baseline "Office clerk". Environmentalists' political orientation as "Conservatives" elicited a significant negative effect on the profiles' typicality as environmentalist (p<.001) and the participants' self-identification (p<.001) with these profiles. Lastly, we observed that profile descriptions with a "Local concern", compared to a baseline "Global concern", as main environmental concern were evaluated significantly less competent (p=.023) and typical as environmentalist (p<.001), as well as participants self-identified themselves (p<.001) less with the presented profiles.

Figure 3.5

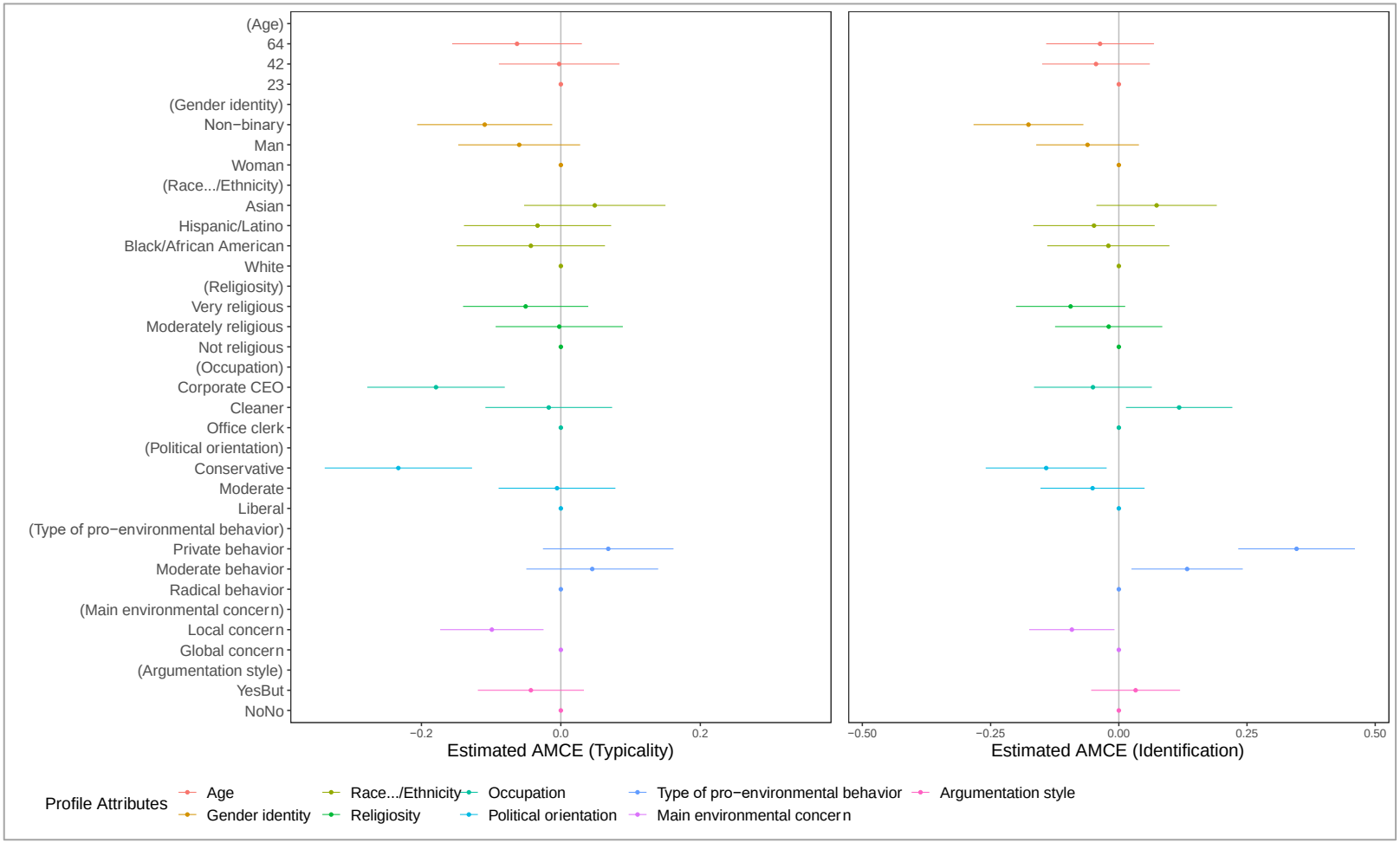
Average Marginal Component Effect estimates for each attribute value on the profile ratings for Competence, Friendliness, and Trustworthiness



Note. The x-axis units indicate the sizes of the AMCEs.

Figure 3.6

Average Marginal Component Effect estimates for each attribute value on the profile ratings for Typicality as environmentalist and Self-identification with the profiles



Note. The x-axis units indicate the sizes of the AMCEs.

3.3.3. Subgroup differences

To understand if and how participants' own characteristics influenced the profile ratings, participant subgroups were compared based on their identification as environmentalist and socio-demographic characteristics (i.e., self-assessed social class, race/ethnicity, political orientation).

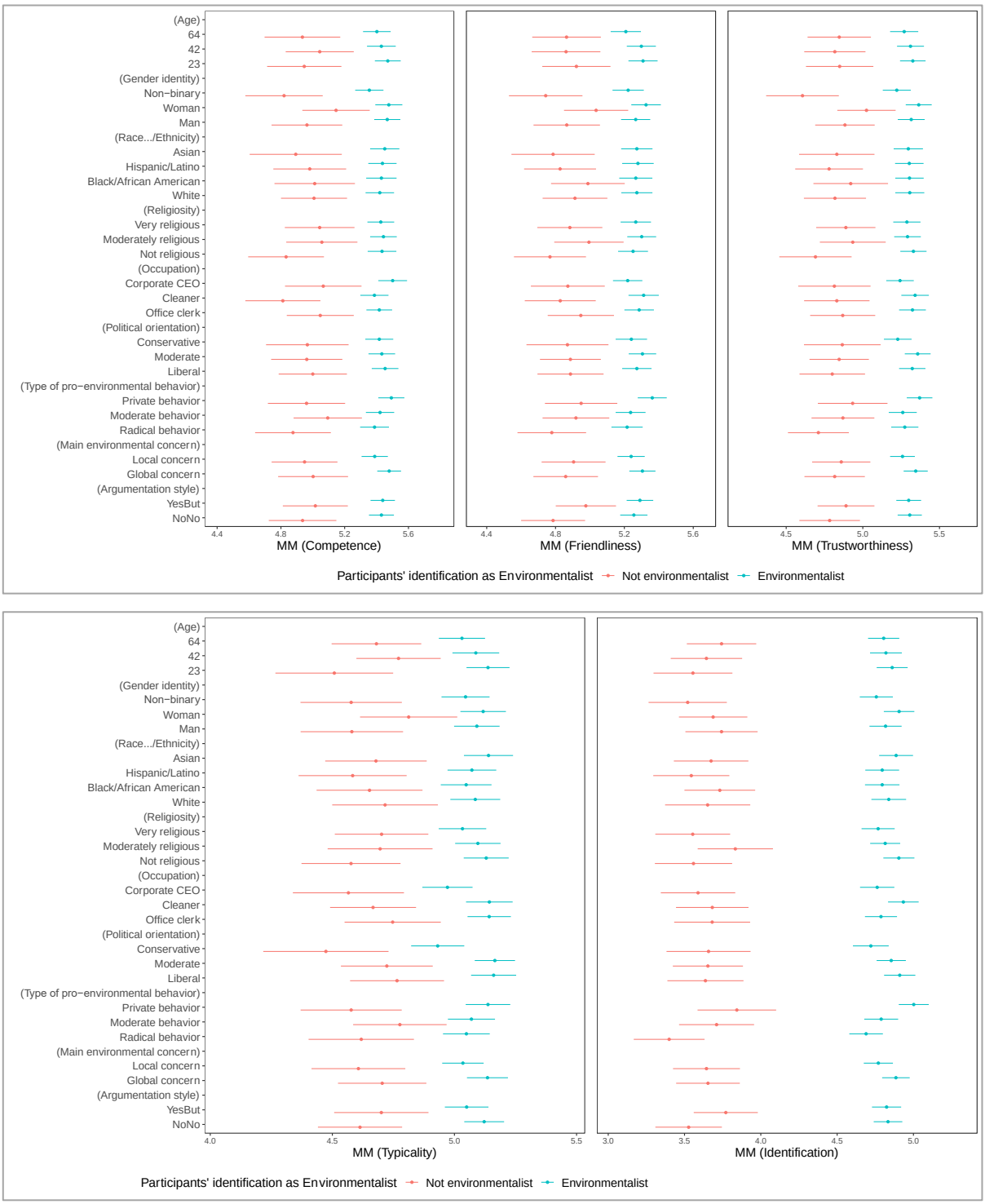
Environmentalist self-identification. We conducted subgroup analyses after grouping participants into "Environmentalist" and "Not environmentalist" according to their degree of identification as such (Brick & Lai, 2018). Split by this group identification, Figure 3.7 displays the results of the marginal means of participants' profile ratings regarding their competence, friendliness and trustworthiness, typicality as environmentalist and participants' self-identification with the profiles.

Statistically comparing the two groups for differences showed significant results across all dependent variables; Competence, $F(18, 5388)=7.74$, $p<.001$, Friendliness, $F(18, 5388)=5.69$, $p<.001$, Trustworthiness, $F(18, 5388)=7.87$, $p<.001$, Typicality, $F(18, 5388)=5.83$, $p<.001$, and Identification, $F(18, 5388)=29.34$, $p<.001$. Furthermore, pairwise comparisons revealed that the two groups differed significantly across all attribute values and dependent variables (see Figure 3.7). Comparing MM ranges, participants that identified as "Environmentalists" perceived the profiles generally more competent ($MM_{\text{min}} = 5.4$, $MM_{max} = 5.5$), friendly ($MM_{\text{min}} = 5.4$, $MM_{max} = 5.5$), trustworthy ($MM_{\text{min}} = 5.2$, $MM_{max} = 5.4$), and typical as environmentalists ($MM_{\text{min}} = 4.9$, $MM_{max} = 5.2$) as well as could self-identify ($MM_{\text{min}} = 4.7$, $MM_{max} = 5.0$) more with them.

Thus, our expectations were supported regarding participants that consider themselves environmentalists would generally evaluate the presented profiles more positively (H3.1). Please see Annex G for more subgroup comparisons matching the participants' level of environmental concern, pro-environmental behavior, and main environmental concern with the respective profiles' attributes.

Figure 3.7

Marginal Mean estimates for each attribute value on the profile ratings for Competence, Friendliness, Trustworthiness, Typicality as environmentalist and participants' Self-identification with the profiles, contrasted by participants' identification as environmentalist

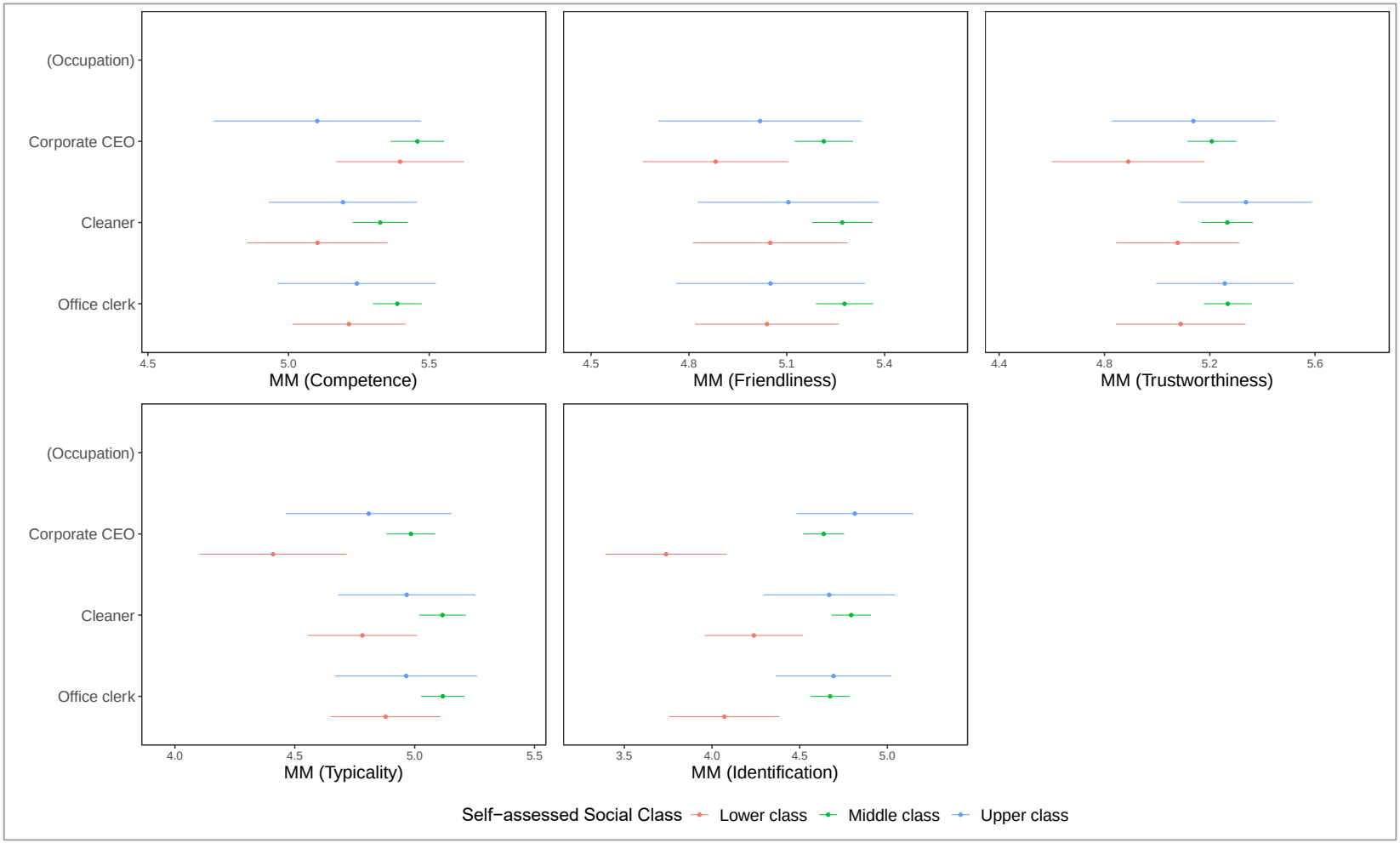


Socio-demographic characteristics. We conducted subgroup analyses matching the participants' attributes with the respective environmentalist profiles' attributes. Since a thorough analysis of all socio-demographic variables would have exceeded the scope of this master thesis, we focused on participants' self-assessed social class, racial and ethnic identification, as well as political orientation (Pearson et al., 2018; Stenhouse & Heinrich, 2019).

In the development of the study, we applied "Occupation" as reference for social status, which is why we matched this attribute with participants' self-assessed social class. Statistically testing for marginal mean differences of participants' impressions between their self-assessed social classes, we found significant differences with respect to competence, $F(6, 5415)=4.33$, $p<.001$, friendliness, $F(6, 5415)=6.20$, $p<.001$, trustworthiness, $F(6, 5415)=3.93$, $p<.001$, typicality, $F(6, 5415)=9.56$, $p<.001$, and self-identification, $F(6, 5415)=22.17$, $p<.001$. Hence, participants' impressions of the different occupation values varied in relation to their self-assessed social class. As mentioned earlier, the applied R packaged did not provide multiple comparisons for attributes with more than two levels, which is why we do not have an account of which differences were statistically significant. Figure 3.8 displays the results across all outcome measures. Next to the differences in MM range sizes, we could recognize patterns from participants of self-assessed lower social class. Accordingly, they rated the environmentalists across all occupations least friendly, trustworthy, typical, and could least identify themselves with the profiles. Furthermore, "Corporate CEO" profiles were perceived most competent by self-assessed middle- and lower-class participants but not by participants from the self-assessed upper-class. Generally, participants from the middle-class showed stable ratings across the occupation values. Moreover, they showed similar impressions as the upper-class participants in respect to the perceived profiles' trustworthiness and typicality as environmentalist as well as participants self-identification. Thus, our expectation was not supported in regard to participants rating environmentalists more positively according to their shared social status (H3.2a). Please see Annex G for similar patterns of participants' self-assessed social class that were found across the other attribute values.

Figure 3.6

Marginal Mean estimates for each attribute value on the profile ratings for Competence, Friendliness, Trustworthiness, Typicality as environmentalist and participants' Self-identification with the profiles contrasted by participants' self-assessed social class



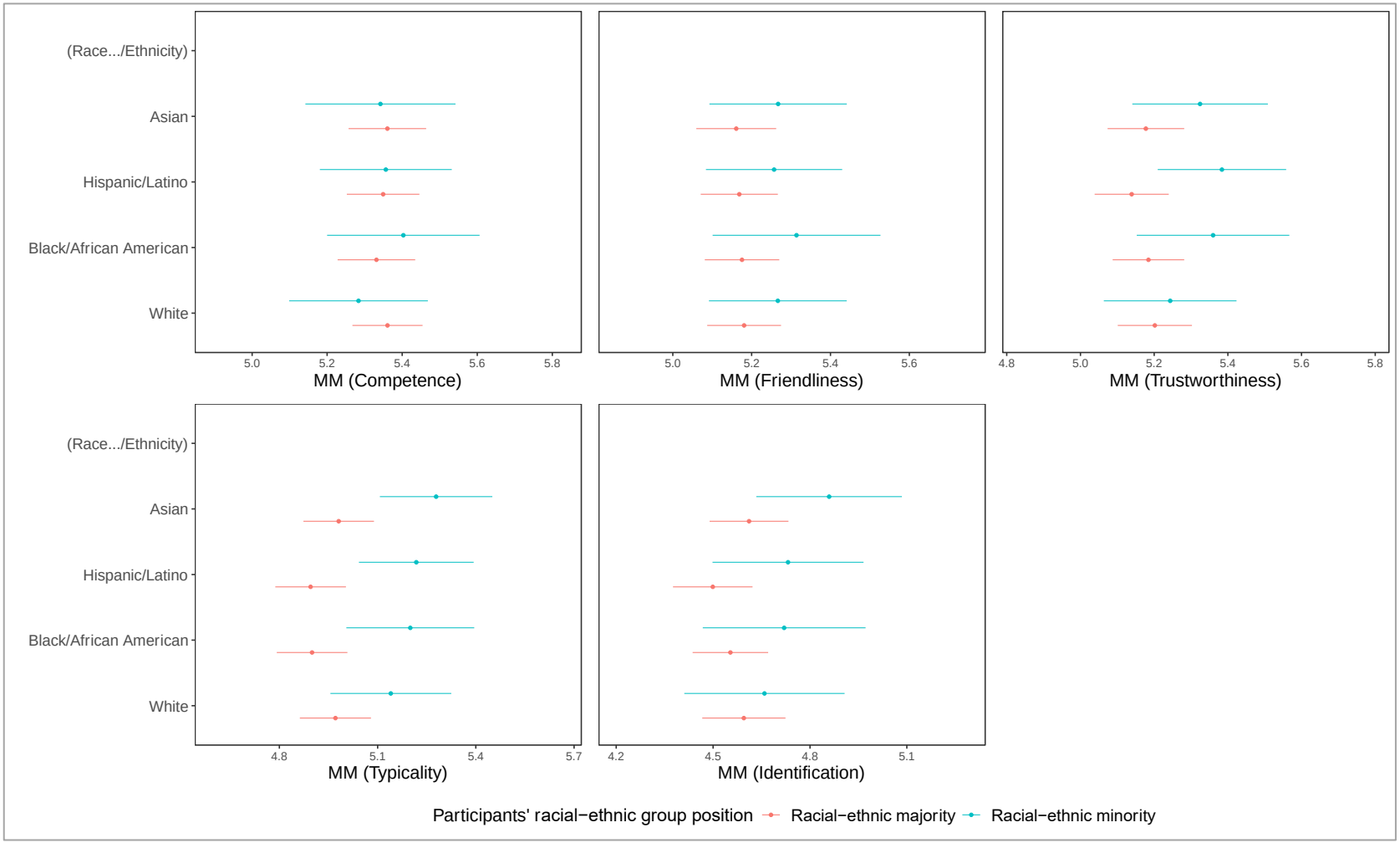
Moving our focus to the influence of participants racial and ethnic identification, we tested for marginal mean differences in impression ratings between the groups. As mentioned earlier, we grouped the participants according to their responses into "Racial-ethnic majority" or "Racial-ethnic minority" (see measures) and matched them with the profiles' attribute "Race/Ethnicity". This way we could compare whether the participants racial-ethnic majority or minority status influenced their impressions of environmentalists. Statistically, the two groups differed significantly in their ratings of the profiles' race and ethnicity across the dependent variables trustworthiness, $F(4, 5400)=4.77$, $p<.001$, typicality, $F(4, 5400)=10.63$, $p<.001$, and self-identification, $F(4, 5400)=3.83$, $p=.004$.

These results were visualized in Figure 3.9 and supported in pairwise comparisons. Besides noticing, again, differences in marginal mean range sizes, we identified a pattern of "Racial-ethnic minority" participants of perceiving environmentalist profiles from U.S. racial-ethnic minority status (i.e., "Asians", "Hispanic/Latino", "Black/African American") more trustworthy, typical as environmentalists, and self-identified more with them. Specifically, racial-ethnic minority status participants saw "Hispanic/Latino" ($p=.017$) environmentalists as more trustworthy than racial-ethnic majority status participants did. Moreover, profiles being "Asian" ($p=.004$), "Hispanic/Latino" ($p=.002$), and "Black/African American" ($p=.008$), were significantly seen as more typical for environmentalists by racial-ethnic minority participants. Surprisingly, pairwise comparisons did not support the earlier identified differences in self-identification between racial-ethnic minority and majority participants across the profiles' race-ethnicity attribute values.

Thus, our expectation was only partially supported that the racial-ethnic minority participants rated those environmentalists higher that they shared a racial-ethnic group position with (H3.2a). Please see Annex G for similar patterns of participants' racial-ethnic group position that were found across the other attribute values.

Figure 3.7

Marginal Mean estimates for each attribute value on the profile ratings for Competence, Friendliness, Trustworthiness, Typicality as environmentalist and participants' Self-identification with the profiles contrasted by participants' racial-ethnic group position in U.S.

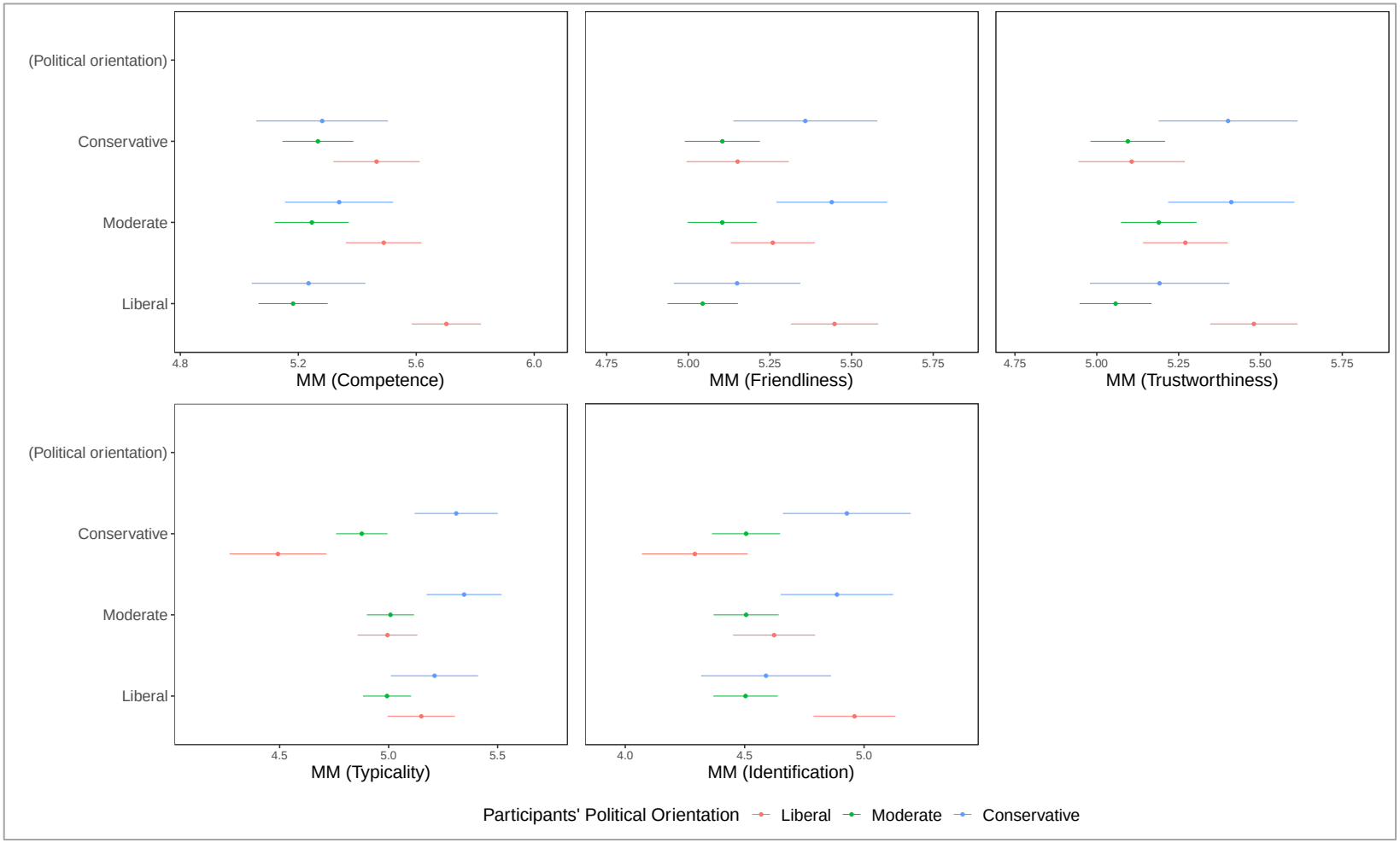


Last, in order to examine the influence of participants political orientation, we grouped them according to their responses into “Liberal”, “Moderate”, and “Conservative” (see measures). Testing for marginal mean differences between these groups, we matched them with the environmentalist profiles’ attribute “Political orientation”. This way we could compare whether the participants political standpoint influenced their ratings of the environmentalists. Statistically, we observed highly significant differences between the groups in their ratings of the profiles’ political orientation across all dependent variables. Accordingly, they rated distinctly regarding the profiles’ competence, $F(6, 5375)= 15.61$, $p<.001$, friendliness, $F(6, 5375)=11.96$, $p<.001$, trustworthiness, $F(6, 5375)=11.26$, $p<.001$, typicality, $F(6, 5375)=18.31$, $p<.001$, and self-identification, $F(6, 5375)=14.06$, $p<.001$. These results across all outcome measures were visualized in Figure 3.10. We could recognize patterns of participants perceiving profiles from the same political orientation more positively. Accordingly, “Conservative” participants perceived “Conservative” and “Moderate” profiles generally more friendly and trustworthy as well as could identify themselves more with them compared to “Liberal” profiles. Participants with a “Liberal political orientation saw “Liberal” profiles most competent, friendly, trustworthy, typical, and could self-identify most with them. “Moderate” participants didn’t show strong fluctuations.

Thus, our hypothesis was supported regarding participants rating those environmentalists higher that shared the same political orientation (H3.2b). Please see Annex G for similar patterns of participants’ political orientation that were found across the other attribute values.

Figure 3.10

Marginal Mean estimates for each attribute value on the profile ratings for Competence, Friendliness, Trustworthiness, Typicality as environmentalist and participants' Self-identification with the profiles contrasted by participants' political orientation



CHAPTER 3

Discussion

Through the present study aims to expand the scientific knowledge on the perception of environmentalists as social category in the U.S. general public. Here, environmentalists are strongly stereotyped and politicized, yet a still understudied social category. Aiming at identifying the social identity factors that influence public impressions of and self-identification with environmentalists, we wanted to answer (1) which identity factors of fictitious environmentalist profiles led a sample of U.S. residents (1.1) to perceive them as competent, friendly, and trustworthy, (1.2) see them as typical environmentalists, and (1.3) to self-identify with them. Moreover, we aimed to expand previous research on *atypical* environmentalists (Bashir et al., 2013; Stenhouse & Heinrich, 2019), by (2) analyzing whether the fictitious profiles described by attributes inconsistent (vs. consistent) to existing stereotypes would improve impressions of and self-identification with them. Last, we wanted to close the existing research gap related to (3) how U.S. residents' own social identity factors and group memberships may influence the previous relationships. Namely, by an analysis of the basic sources for positive judgments of (3.1) their self-identification as environmentalists and (3.2) similarity with the described profiles regarding socio-demographic attributes.

We addressed these research questions through the novel application of a conjoint analysis as multidimensional rating experiment within an online survey format. Respectively, we presented to our survey participants fully randomized profile descriptions of environmentalists in a tabular form and then measured their impressions on the dimensions of competence, friendliness, trustworthiness, and perceived typicality, as well as participants' self-identification with the profiles. Together with the assessed participants' standpoints in environmentalism and socio-demographic data, we statistically analyzed the conjoint data in R (Leeper, 2020) in line with the research questions.

4.1. Main findings and their interpretation

4.1.1. Effects of different attribute values[9]

To analyze the participants' impressions of and self-identification with environmentalists' individual profile attributes, the mean ratings for each attribute value marginalized across all other attributes were calculated (i.e., Marginal Means).

4.1.1.1. Competence, Sociability, and Trustworthiness. Overall, our results correspond well with our expectations and prior stereotype literature (e.g., stereotype content model, Fiske et al., 2002). For example, (1.1) environmentalist profiles ascribed as women were generally perceived more friendly, trustworthy, and competent, than the other gender options. This is contrary to findings of Fiske et al. (2002), where men are usually perceived more competent than women. Interpreted through the SCM quadrants (Fiske et al., 2002), women are admired in our study. In contrast, non-binary profiles were rated the lowest among all three stereotype dimensions. Bearing in mind that the social concept of non-binary gender identity is relatively new (Matsuno & Budge, 2017), our findings could be explained through participants perceiving non-binary environmentalist as unconventional and eccentric. Although eccentricity had been found as a typical trait of environmentalists (Bashir et al. (2013), combining two already unconventional and stereotyped identity dimensions, namely environmentalists and non-binary gender, seemed to have elicited least positive impressions among participants. Expanding the knowledge in this field, Stenhouse and Heinrich (2019) investigated the mediating role of perceiving environmental activists as eccentric, militant, and friendly, using a conjoint design as well. They found eccentricity to be least important to increase the attention to activists. Our results may align with Stenhouse and Heinrich's (2019) findings as that an unconventional non-binary profiles did not improve our participants' impressions, though contrary to what we originally expected of stereotype-inconsistent traits. Since this was not a focus of our research, we did not address this interesting possible relationship between the non-binary attribute value and more radical (or militant) pro-environmental behaviors on participants' impressions.

Furthermore, profiles with the high-status occupation "corporate CEO" were rated as most competent, compared to cleaners and office clerks, but not as friendly or trustworthy. Although

[9] As a reminder, attributes are the features or characteristics that describe the profiles. They consist of levels or values that represent the different choices for each attribute.

the underlying differences did not reach the level of significance, we further found tendencies indicating that lower paid jobs as office clerks and cleaners were being seen more friendly and trustworthy than corporate CEOs. These finding correspond to previous research showing that higher status levels predicted higher competence while competition predicted lower warmth/friendliness (Fiske et al., 2002). In another instance, Fiske and Dupree (2014) had found similar effects with climate scientists: for a communicator to be credible and attention-grabbing, they need to be both competent in providing expertise as well as be perceived as warm and trustworthy. Aligning these findings to our study, the occupation and gender found closest to such a credible communicator through our conjoint analysis was the female "office clerk".

Further, young environmentalists were rather seen as friendly by the survey participants as compared to older ones. In contrast to previous literature (Fiske et al., 2002), participants from the present study tended to rate young environmentalists overall more positively than older ones. More specifically, profiles of older environmentalists (i.e., "64") were neither perceived friendly nor competent, which can possibly be explained by the SCM quadrant as the feeling of contempt (Fiske et al., 2002). Considering that the average participant's age was $M = 34.26$, we could explain this tendency to originate from possible intergenerational tensions mainly based on prejudices held by younger people (North & Fiske, 2012, 2013). Accordingly, that younger people evaluate older adults low on the dimensions of warmth and competence because they may see them as a passive "parasitic social group" (North & Fiske, 2012, pp.988). Such perceptions might be reinforced through ingroup favoritism, which we discuss in a later section (Brewer, 2007). Further empirical investigations are required to address any of these possible explanations.

Highly relevant to the U.S. context is the environmentalists' political orientation. Respectively, environmentalists with a moderate political orientation were perceived most and conservatives least trustworthy. Interestingly, but not significantly different, environmentalists with a liberal political orientation were seen as most competent but not as friendly compared to political moderates. Overall, participants saw profiles with a moderate political orientation as most friendly and trustworthy, while perceiving conservative profiles least competent and friendly. These results are particularly interesting considering the fact that the political orientation in our sample was found to be well-balanced. As a possible explanation, both liberals and conservatives similarly perceived profiles from the ideologically dissimilar group less friendly and trustworthy. Hence, political moderates who did not pose a threat to either of

them were generally preferred (Brandt et al., 2014). This issue we will further discussed in the last section on subgroup differences.

Also relevant to the U.S. context is race and ethnicity: the ratings on environmentalists characterized by their race and ethnicity did not show any substantial tendencies and therefore did not correspond our predictions. Namely, that "White" profiles were not found to be seen most friendly and competent, and "Asian" profiles competent but not friendly (Fiske et al., 2002). Instead, survey participants rated profiles similarly across all racial and ethnic attribute values, regarding competence, friendliness, and trustworthiness. In addition, the ranting results could have been influenced by the current debate on systemic racism, the *Black Lives Matter* movements, and ongoing social tensions in the U.S. In this respect, participants' racial attitudes could have been shifted towards more neutral perceptions across different racial and ethnic groups (Sawyer & Gampa, 2018). Although contrary to our expectations, these results give hope for actual social change and societal improvements happening in the U.S.

Further, in line with prior research (Castro et al., 2016; Klas et al., 2019), survey participants perceived environmentalists with private pro-environmental behaviors more friendly and trustworthy than the ones with radical behaviors. Although environmentalists with moderate pro-environmental behaviors were perceived more competent than those with radical behaviors, they were still perceived less friendly and least trustworthy than private ones. This finding could be explained by the fact that "moderate behavior" still had an activist nature (e.g., "Writes political representatives"). Moreover, that environmentalists with radical behaviors were not perceived as competent as profiles with moderate behaviors is contrary to our expectations and previous literature (Castro et al., 2016). Thus, these results can be explained as that the public generally dislikes and poorly understands actions perceived as radical or militant, such as demonstrations (Klas et al., 2019; see Annex E for participant comments). As a further support for this line of argument, though not of a significant difference, environmentalists with a conciliatory (vs. confrontational) argumentation style were perceived as more competent and friendly. Hence, our findings were in line with prior results explaining the effect of activists' radical discourse as being penalized on the sociability but not entirely on the competence dimension (Castro et al., 2016). In this respect, based on our results, the least ostentatious and demonstrative the environmentalists were described the more positively they were perceived. Therefore, environmentalists are facing the *activist dilemma* (Feinberg et al., 2017), in which raising public awareness ends up reducing public support.

In conclusion, environmentalist profiles were overall seen as most competent, friendly, and trustworthy by a sample of U.S. residents, when described as young, female, office clerks, with

a moderate political orientation, and only pro-environmentally active at a private level. These results are in line with Fiske and Dupree's (2014) research on credibility as someone's expertise (i.e., competence) and motivation to be truthful (i.e., warmth/trustworthiness). Hence, the identified traits may indicate with which characteristics an environmentalist would be seen as most competent, friendly, and trustworthy, thus more credible and receiving the public's attention. We suggest further research to investigate this relationship.

4.1.1.2. Typicality as environmentalist. Most of our expectations on the profiles' typicality as environmentalist were supported by our study results (1.2). For example, participants found women, rather than men and non-binary profiles, and Asians first, then Whites, to be most typical as environmentalists. This aligns with previous research associating pro-environmental behaviors and stronger environmental concerns with feminine traits (Brough et al., 2016; Swim & Geiger, 2018). As explanation for this relationship, common traits associated to women and environmentalism could have played a decisive role. Such as the historical and persistent understanding of pro-environmentalism as caring (Rome, 2006) and the stereotypical ascription of caretaking to female gender roles (Eagly et al., 2000). Consequently, when compared to women, men were not perceived as typical, but were still more typical than profiles with a non-binary gender identity. Again, this could be explained through the unconventionality of non-binary genders (Matsuno & Budge, 2017). However, the non-binary attribute value was not judged as much untypical for environmentalists as, for example, a corporate CEO or a conservative. Thus, as environmentalists are generally perceived seen as eccentric and unconventional (Bashir et al. (2013) a non-binary environmentalist would not surprise.

Contrary to our expectations, White profiles were perceived as less typical for environmentalists than Asians which were rated most typical. This is surprising as previous literature had pointed out that Asian individuals, among other U.S. racial-ethnic minority groups, were perceived as least environmentally concerned compared to Whites (Pearson et al., 2018), while still being rated more concerned than other racial-ethnic minority groups. Our results may indicate a shift in the perceived environmentalist prototype, thus, expanding existing knowledge in literature. As such, status predicted competence (SCM, Fiske et al., 2002) and the environmentalist identity was seen as related to higher social status (Pearson et al., 2018). Consequently, Asian Americans, who have been stereotyped highly competent, may therefore be considered more typical as environmentalist. However, such a shift in

prototypicality and the here provided explanation should be further investigated in future research.

Largest differences in the perception of typicality were found regarding environmentalists' occupation and political orientation. Based on the study by Pearson et al. (2018), we expected profiles of middle class social status to be perceived most typical for environmentalists. Accordingly, we found that office clerks (i.e., middle social status) were seen as most typical while, contrary to previous literature, cleaners (i.e., lower social status) were perceived similarly typical as environmentalists. Moreover, corporate CEO profiles were seen as least typical. In this regard, our findings extend previous literature (Pearson et al., 2018) as to that lower social status occupations are not necessarily perceived untypical for environmentalists or environmentally concerned. Furthermore, upper social class jobs, such as corporate CEOs, might be perceived by the public as too unrealistic as environmentalists. Similarly, profiles with conservative political orientations were perceived untypical for environmentalists compared to liberal and moderate profile descriptions. These results are in line with previous research indicating that environmentalists are generally associated with left-leaning ideologies and political identification (Merkley & Stecula, 2018).

Regarding the profiles' environmentalism attributes, our results do not support our assumptions that radical pro-environmental behaviors would be perceived more typical for environmentalists than moderate or private behaviors. For example, previous research suggested that environmentalists are typically perceived as militant and aggressive (Bashir, 2010; Bashir et al., 2013). A possible explanation related to social cognition research on impression formation (Fiske & Neuberg, 1990). Accordingly, people's information processing is moderated by their personal motivations. Hence, while study participants showed an overall preference for more private pro-environmental behaviors (see previous section), these personal motives could have influenced their perceptions of typicality as well. In turn, however, despite (non-significant) personal preferences tendencies for a concessional (vs. confrontational) argumentation style, participants perceived the confrontational (i.e., radical) discourse style as typical, rather than atypical, for environmentalists. Thus, future research is needed to further investigate explanations for environmentalists' prototypicality regarding more radical/activists' behaviors.

Moreover, participants found environmentalist profiles with mainly global environmental concerns to be more typical than profiles with local concerns. Previous research found that vulnerable U.S. population segments (i.e., People of color, also POC), were more concerned with local and human-oriented environmental problems than the White population segment

(Mohai & Bryant, 1998; Song et al., 2020). Minding our study sample to mostly consist of White / Caucasians (74.2%), it is not surprising that profiles with mainly local environmental concerns were perceived less typical as environmentalists. This result can be interpreted as a depreciation of the vulnerable and low-status populations' concerns related to larger and disproportioned environmental risks within the U.S. as compared to more privileged societal groups (Mohai et al., 2009; Timmons Roberts et al., 2018).

Summarizing our new insights on the typicality of environmentalists, participants' perceptions on corporate CEOs and political conservatives to be least typical and therefore least realistic as environmentalists was among the most novel results[10].

4.1.1.3. Self-identification with profiles. As a last part of our first research question (1.3), we found significant differences in participants self-identification depending on the diverse typology of environmentalists. Namely, we found stronger identifications with female environmentalists compared to non-binary profiles. Moreover, participants self-identified most with cleaners and least with CEOs or office clerks. Last not least, participants identified themselves most with profiles describing private pro-environmental behaviors.

Participants' tendencies to self-identify most with environmentalists at particular attribute levels, can be understood as *self-defining* and *self-investing* components of identification (Leach et al., 2008). In this respect, participants may have perceived themselves (i.e., *individual self-stereotyping*) and their in-group (i.e., *in-group homogeneity)* as similar to the environmentalists that were women, cleaners, and pro-environmentally active in private spheres. Moreover, according to Leach et al., (2008) participants may have: 1) felt positively towards these environmentalists (i.e., *satisfaction*); 2) felt a sense of belonging and attachment to those profiles (i.e., *solidarity*); and 3) perceived them as central to their self-concept, thus, being more aware of in-group threats (i.e., *centrality*).

Since we didn't apply this model, we couldn't measure which components are more or less present. Moreover, based on the calculated marginal means our study, participants generally did not self-identify strongly with the presented profiles (see results). This could be due to the inaccurate descriptions, participants' (lack of) self-identification as environmentalist (discussed later), or the measure itself. Hence, future research could follow-up on fine-tuned identity components. Nevertheless, our results indicate that participants were more inclined to identify with environmentalists that were women, the occupation of cleaners, and private pro-

[10] The extent to which participants found environmentalists as corporate CEOs and politically conservative as highly unrealistic, we could comprehend from their survey comments in Annex E.

environmental behaviors. These aspects, and generally self-identification with different environmentalists, should be considered in practical application since they might be more likely to be influential.

4.1.2. Effects of atypical profiles

With the aim to extend Bashir et al.'s (2013) findings on stereotype-inconsistent attributes (i.e., atypical environmentalists), we analyzed the differences between profiles displayed with stereotype-consistent traits (e.g., liberal) and profiles with stereotype-inconsistent traits (e.g. conservative). Thus, (2) estimating if atypical descriptions actually improved impressions, we observed both positive (as expected) and negative effects on participants' judgements of and self-identification with environmentalists[11].

As one finding, we observed *positive effects* of atypical environmentalists' profiles. Private pro-environmental behaviors were perceived overall more competent, friendly, and trustworthy than profiles with radical (stereotype-consistent) behaviors. In this regard we need to mention, that even though we considered (backed by literature) radical pro-environmental behaviors as stereotypical for environmentalists, but, contrarily, study participants perceived private pro-environmental behaviors as more typical (see section 4.1.1.). Moreover, a similar relationship was observed in participants' preference to self-identify with environmentalists described through private or moderate pro-environmental behaviors rather than radical ones. Surprisingly, participants' self-identification towards environmentalists was higher when described as cleaners instead of office clerks (stereotype-consistent).

As second finding, and contrary to literature, we also identified *negative effects* of stereotype-inconsistent traits on participants' ratings. Namely, the values describing environmentalists as non-binary, men, 64-year-olds, corporate CEOs, political conservatives, and local environmental concern, caused lower ratings of environmentalists' competency, friendliness, trustworthiness, perceived typicality, and participants self-identification with the profiles (detailed discussed in section 4.1.1.).

Based on the above results and its interconnections to the first research question (section 4.1.1.), we conclude that people, overall, prefer environmentalists that are individually or privately active in contrast to radical behaviors (Castro et al., 2016; Klas et al., 2019). Hence,

[11] The here discussed findings refer to the significant differences found between attribute values that are consistent vs. inconsistent with previous literature. Moreover, the overall patterns are similar to the ones addressed in section 4.1.1.

environmentalists that do not pose a threat in any way. Previous literature pointed out that activists, or so called "moral rebels", are seen by some as a "threat to society" (Hoffarth & Hodson, 2016, p.40), challenge to the public status quo (Lindblom & Jacobsson, 2014), or threaten people's positive self-image (Monin et al., 2008). In addition, the present findings supported our earlier observations of participants rather identifying with environmentalists as cleaners than as office clerks. Whether these results are related to subgroup differences, we will discuss in the following section. Moreover, our findings are in line with previously discussed results (section 4.1.1.) and suggest that atypical environmentalist ascriptions don't necessarily correspond with a better impression of environmentalists.

Furthermore, with our findings we want to direct future research towards investigating effects of atypical environmentalists on impression formation. More specifically, the influence of stereotype strength (Allen et al., 2009) and stereotype incongruency (Sekaquaptewa & Espinoza, 2004) on impression processing. Another approach can be trying to understand our results through the theory of impression formation on the continuum of category- to individuating information processing (Fiske & Neuberg, 1990). Applied to our results, the presentation of atypical information of environmentalists might have elicited greater attention and therefore caused a more individuated information processing. Moderated by underlying individual motivations, private pro-environmental behaviors elicited overall more positive judgements. Nevertheless, the influence of impression formation calls for further investigation,

4.1.3. Subgroup differences

Subgroup comparisons to understand how participants' own group memberships might have influenced the previously presented results (3), indicated an influence on previous relationships. In detail, we found (3.1) that participants *self-identification as environmentalists* generally lead to more positive impressions of and self-identification with the ascribed profiles. Hence, these results supported our expectations of an ingroup preference (Brewer, 2007). Given the large number of participants considering themselves as environmentalists (n = 553 vs. n = 125 "Not environmentalists"), such ingroup preference is not surprising. This possible bias might have influenced our results overall. Thus, in future research participants' level of identification as environmentalist should be balanced and tested as covariate respectively integrated as moderator variable. Our results further showed, (3.2) that participants' *self-assessed social class, membership in a U.S. ethnical/racial minority or majority group,* as well as *political orientation* moderated the effect of the attributes on the outcomes.

Self-assessed social class. While participants' self-assessed social class was found to influence their impressions and self-identification, the resulting effects were not as expected. Participants from the lower social class rated the environmentalists generally lower, especially the corporate CEOs, and identified least with either occupation. Moreover, lower-class participants did identify most with the occupation (i.e., cleaner) corresponding to their social class. In contrast, middle-and upper-class participants showed similar and more positive ratings across all profile occupations. Only upper-class participants perceived the occupation matching their social class (i.e., Corporate CEO) as least competent and typical as well as lower ratings in friendliness across all occupations. These results demonstrated that social class had an influence on people's impressions and self-identification, not didn't necessarily lead to positive ratings only. Methodologically, care should be taken when concluding on these findings based on disproportionate subgroups (*Lower class* = 92, *Middle class* = 525, *Upper class* = 61). Nevertheless, our results provide valuable indications but need further investigation to be substantiated.

Minority or majority. Our results showed that participants' membership with a U.S. specific racial or ethnical minority or majority group did influence their ratings on the ascribed profiles towards race and ethnicity. Racial-ethnic minority group participants perceived environmentalists from a similar group to their own more trustworthy (i.e., "Hispanic/Latino") and typical (i.e., "Asian", "Hispanic/Latino", and "Black/African American"). In addition, they saw profiles ascribed as "White" least competent, trustworthy, typical, and identified least with them. In contrary, majority group participants showed ratings similar across all racial and ethnical groups. There was a tendency, although non-significant, to perceive White and Asian profiles' somewhat more typical as environmentalists in line with an increased tendency to self-identifying with them.

These subgroup comparisons reveal that different racial and ethnic group memberships may moderate participants' ratings, aligning with Pearson et al.'s (2018) results of increased associations between nonwhites and the category of environmentalists among minority group participants when exposing them to a diverse description of an environmental organization. Moreover, these findings indicate that minority group participants are more aware and involved with issues of environmentalism as previous literature has indicated as well (Jones, 2002; Pearson et al., 2018)

From a methodological standpoint, again, disproportionate subgroup (*Minority* = 173 and *Majority* = 503) may have, overall, influenced the above results on environmentalist rating. Moreover, a heterogeneity within the racial-ethnic minority group must be considered as it

comprises people from numerous and multi- racial and ethnic backgrounds, which may be reflected in the large dispersions of the group's marginal means. Within the scope of this Masters' thesis' underlying issues of multiracial and -ethnical identities could not be further investigated. Hence, our results indicate important findings that call for further attention and investigation.

Political orientation. Participants with a conservative political orientation self-identified most with and saw conservative and moderate environmentalists as most friendly and trustworthy. Moreover, participants with a liberal political orientation generally perceived liberal environmentalists more competent, friendly, and trustworthy, saw them as most typical and self-identified most with them. In contrast, participants with a moderate political orientation didn't show any differences. In line with our expectations (Brewer, 2007), participants with a liberal political orientation showed a clear bias towards profile ascriptions with similar political standpoints indicating an ingroup preference. Similarly, politically conservative participants indicated a negative bias across most ratings towards profiles with a liberal political orientation. Thus, still more open to politically moderates, but obviously disliking liberal environmentalists. In conclusion, participants' political orientation could have moderated their evaluations of the environmentalist profiles.

As compared the previously discussed subgroup differences, participants were more balanced, but still not equal in size, across the different political orientations (*Liberals* = 221, *Moderates* = 310, *Conservatives* = 142). Hence, in the general results preferences were detected towards politically moderate environmentalists' profiles supporting findings previously published in the literature (Stenhouse & Heinrich, 2019). In conclusion, our findings suggest that the environmentalist's portrayal in terms of political orientation makes a difference in impressions of different groups.

4.2. Further limitations and future research

Owing to its novel methodological approach, this study comprises an experimental approach including directed hypotheses as well as exploratory/non directional questions. The conjoint analysis provided an analysis tool for one-by-one examinations of multiple randomized attributes in order to identify which attribute component produced the observed effect. As a result, causal interdependencies in conjunction with descriptive interpretations evolved indicating directions for further experimental investigation. In the following, we will outline

the limitations of the present study in a chronological order followed by final conclusions and recommendations for future research.

4.2.1. Study construction

The application of a conjoint analysis is still considered a novel approach in psychological research. While the method receives increasing attention in, the practical application itself is still being improved and adapted. Owing to a shortage of specific guidelines on how to apply a conjoint analysis for an online survey, the development and construction of this analysis tool required an extensive search for instructions from different sources including HTML and JavaScript coding in Qualtrics and R coding for the statistical analysis. As a first limitation to our study, we might have missed out on essential computing information and resources that we were not aware of (Hainmueller et al., 2014). Nevertheless, we applied the method without experiencing any major problems or errors. Despite its increasing application in many studies and depending on the scientific field in psychology, the external validity of the conjoint analysis is still an open issue. Hence, for future application of a conjoint analysis in Qualtrics without paying for the platform's own analysis tools we recommend user to receive advice from an experienced coder.

Another limitation was that the conjoint tables only provided a limited number of possible descriptions in the attempt to artificially describe environmentalists. Moreover, due to statistical power calculations and sample size restrictions, we could only integrate attributes with a maximum of four values. Thus, we had to exclude, for example, native Americans from the race/ethnicity attribute category, who play a highly relevant role in environmental protection in the U.S. (Johansen, 2019). Furthermore, and despite all our efforts to avoid unusual profiles, some of the combinations displayed to participants still appeared weird, such as a conservative POC environmentalist or a 23-year-old CEO (see comments Annex E). Thus, adding variety in the presented profiles and attribute values could have been more realistic to the survey participants, on one side, but causing problems with statistical power and sample size, on the other (Stefanelli & Lukac, 2020). Nevertheless, Hainmueller et al. (2015) tested and validated different forms of conjoint and vignette experiments against real-world behavior. His results showed that a conjoint with two profiles was most realistic, providing multiple pieces of information and minimizing social desirability through providing participants with different reasons to justify their responses.

Further, the work duration for the online survey may have posed a limitation of our study owing to effects on participants' fatigue. Nevertheless, the number of conjoint tables and tasks

was found elsewhere (Jenke et al., 2021) to produce stable and reliable outcomes. All in all, future research should aim to limit the number of measures, apply a scale to evaluate internal consistency, to possibly extend the number of attributes and attribute values, and to decrease the number of conjoint tables, while maintaining the given sample size to ensure statistical power.

Another limitation was the choice of measure which might have affected the internal validity of the study. In the comments part at the end of the survey, various participants expressed the confusing and difficulty of having to indicate how competent, friendly, and trustworthy they perceived the environmentalists. They indicated that the corresponding measures could have been better explained and that it was difficult to imagine that the profiles were real people as well as that it was strange to evaluate them on the given dimensions without ever having met them (see comments in Annex E). This feedback, combined with the overall average ratings on our outcomes (not clearly indicating agreement or disagreement of participants), let us question the applicability of the impression measures. For example, the SCM (Fiske et al., 2002) is usually used to capture what society thinks of certain groups and not to measure personal appraisals of a particular profile or person. Hence, future research could rather ask for what participants what society thinks, instead of what they themselves think. Moreover, researchers should reconsider their choice of measurements with regard to the study design and method.

For another limitation, the sequential order of the survey questions might have elicited priming effects within the participants. Namely, the first two questions of the survey concerned participants' self-assessed social class and their racial and ethnic group membership. These questions originally intended limit the participant number through integrated quotas to meet our subgroup goals. Due to limited data collection duration and participant numbers, we ended up not applying the quotas. Unfortunately, one participant commented that they could assume what the study was intending to test/measure (Annex E). Hence, future research should ensure that the order of the questions does not affect participants response behavior.

4.2.2. Data collection

Aside from limitations within the study design, limitations within the data collection must be considered. For example, owing to the required sample size and limited financial resources subject recruitment was achieved through convenience sampling and through paid crowdsourcing (i.e., Amazon MTurk). Moreover, in our convenience sample we had a large

student population that received college credit for participating in the study. Hence, we may not be able to generalize our results to the boarder U.S. population. Despite integrated attention checks (participants had to pass two out of three) and a set time limit, we are still uncertain about participants honesty and diligence when responding to the questionnaire. For example, MTurk workers are known for fast response times and for sharing information through forums with other workers regarding the composition and quality of the survey, which was especially difficult for us to control for (Annex E). Group comparisons showed us, that there were still significant differences between the MTurk and private/convenience sample, as well as between participants that didn't fail any attention check and those that failed one. Furthermore, we also suspect a possible selection bias in our sample. Owing to the topic of the study and the promotion and participant recruitment through the title "Study on U.S. residents' impressions of different types of environmentalists" (Annex B), individuals interested in such topics were possibly more prone to participate. Therefore, we recommend future investigators to recruit study participants from the same source, ensure balanced subgroups as well as being representative for the diverse opinions in the U.S. We also advice to render in the technical difficulties that participants might have with conjoint tasks, such as the visibility and handiness on mobile devices.

4.2.3. Analyses & results

Overall, in our study, more data was collected than what could eventually be analyze within the limited scope of this Masters' thesis project. For example, a manifold of variables was available for detailed subgroup analyses. However, owing to limited space and time only selected issues were analyzed. Hence, we want to recommend future researchers to choose the conjoint design and subgroup variables wisely, as well as reduce the scope of the study or provide enough resources to analyze the entire data.

Furthermore, statistical limitations must be considered though the application of the cregg R package (Leeper, 2020) for our conjoint analysis. Firstly, a statistical control for covariates was not possible owing to the limited option within the cregg R package. Secondly, and for the same reasons, for the subgroup comparisons, it was not possible to test the influence of multiple moderating effects or their interactions. Thirdly, the package only provided omnibus F-tests without contrasts. Thus, only causal interpretations based on the pairwise comparisons were possible to be reported, here. Lastly, the graphs provided by the cregg R package are not

inclusive for color blind readers. Please contact the author[12] in case you had difficulties reading the results.

Regarding our own analytical efforts, we need to mention that we did analyze interactions between profile attributes or participants' variables owing to limited space and time. In fact, the cregg R package would allow for such analyses such these could be conducted in future studies. Moreover, we need to consider that the effects we found could be related to the degrees of freedom. These are related to the large number of presented profile combinations, which were necessary regarding the statistical power but might be reason to finding significant effects easily (Stefanelli & Lukac, 2020).

4.2.4. Conclusive remarks

Our study provides a valuable extension to both stereotype and conjoint experiment literature. We have provided a basic overview that, now, needs to be refined and adapted to be conveyed into practice. In addition, we advise researchers to ensure a large enough and balanced sample originating from the same source. Furthermore, care should be taken to enforce an honest response behavior and to avoid any other possible biases. Lastly, we propose to control for covariates, to check for interaction effects between profile attributes and between participants' characteristics, as well as to consider moderating effects. For further investigations the following questions should be addressed:

- Reliability: Are the identified patterns replicable with more balanced subsamples (e.g., race/ethnicity, political orientation, SES)?
- Validity: How would a reduced number of conjoint tasks with less or different attributes affect participants' rating behavior? Would other outcome measures produce similar patterns and more directional results?

4.3. Theoretical implications

In this study, based on a conjoint design, important relationships between different profile ascriptions of environmentalist stereotypes and participants' identification with the environmentalists were disclosed including participant characteristics. Generally, we extended research on perceptions of environmentalists (Pearson et al., 2018) by examining multiple identity dimensions and the influence of participants' own group memberships.

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Specifically, for the stereotype content literature (Fiske et al., 2002; Leach et al., 2007; Stenhouse & Heinrich, 2019), our findings provide a valuable increase of existing knowledge. Most importantly, our results revealed that positive perceptions of environmentalists as competent, friendly, and trustworthy were related to women rather than to men or to non-binary profiles. Interestingly, profiles ascribed by private pro-environmental behaviors were generally preferred. In this respect, the novel integration of questions regarding people's stereotypical judgments on the dimensions of competence, friendliness, and trustworthiness in a conjoint study demonstrated the potential of conjoint analysis in stereotype research. Moreover, we contributed to previous literature on perceptions of different degrees of environmentalism (Castro et al., 2016) by mapping out the influence of multiple personal attributes of environmentalists (e.g., gender identity, race/ethnicity, political orientation) on the study participants' impressions and identification with them. Also, we have extended the knowledge of people's perceptions of the non-binary gender identity, as that it is generally perceived negatively (Matsuno & Budge, 2017).

We contributed further to environmentalist prototype research (Ratliff et al., 2017). Aside from positive ratings for female environmentalists, attributes referring to Asians, Whites, cleaners, office clerks, political moderates, liberals, with private to moderate pro-environmental behaviors, and a mainly global environmental concerns were perceived most typical. Regarding the effect of atypical environmentalists (Bashir et al., 2013), our findings pointed out that environmentalists' private pro-environmental behaviors and occupation as cleaners improved participants' impressions and self-identification with the profiles. Moreover, and surprisingly, our sample identified most with women, cleaners, and environmentalists with private pro-environmental behaviors. These level-by-level results provide valuable implications for research on environmental identity (Brick & Lai, 2018).

Building on research by Stenhouse and Heinrich (2019), our research provided valuable input in regard to the application of conjoint designs. We extended their findings through the application of new attributes, measures, and examining the influence of multiple participants' characteristics. Moreover, we conducted the conjoint analysis with recent tools and applied an a priori power analysis (Leeper, 2020; Stefanelli & Lukac, 2020). Lastly, we want to point out that we approximated research on impression formation by examining the effects of stereotype-consistent and -inconsistent attributes on participants' impressions within the conjoint experiment (Fiske & Neuberg, 1990). Nevertheless, further research needs to investigate the effects of stereotype strength and congruency to be able to make causal implications (Allen et al., 2009; Sekaquaptewa & Espinoza, 2004).

4.2.5. Practical implications

With the ongoing political debate between conservatives and liberals the public support for and an understanding of environmental issues in the U.S. are hampered. In particular, solutions are needed to detect and resolve the gap between different opinion groups in order to enhance consensus to improve environmental protection.

Our research provides practical implications on how to access the public attention through positive images of environmentalists as credible for environmental movements or science (Fiske & Dupree, 2014) and environmental message framing with respect to the targeted audience (Maxwell & Miller, 2016; Pearson et al., 2018). With such knowledge, public portrayals of and communications with environmentalists can be adjusted according to communicators aim of how and by whom they should be perceived. More specifically, pro-environmental messages should be framed related to moral concerns of harm and care to appeal more to liberals, while messages referring to purity and disgust would activate conservatives' moral values (Feinberg & Willer, 2013). In this respect, it is not only vital to address environmental concerns, behaviors, and attitudes but to address community-based efforts as well so far unidentified as environmentalism (Dietz & Whitley, 2018).

From previous research, environmentalists, and activists in general, are often perceived as aggressive (Bashir et al., 2013) or threatening to the public (Hoffarth & Hodson, 2016; Lindblom & Jacobsson, 2014; Monin et al., 2008). In this respect, our results show that environmentalists with private behaviors are overall preferred by the public (Castro et al., 2016). This poses a fundamental problem. While environmentalists are aiming to raise public awareness for environmental protection and against environmental abuse, they are penalized by the public for being too confrontational when attempting to change the status quo. Hence, they are caught in an activist dilemma (Feinberg et al., 2017) caused by the ironic impact of their good intentions (Bashir et al., 2013). In conclusion, the environmental movement needs opinion opinion brokers acting as mediators to stimulate a discussion and a subsequent consensus in the general public. For positive outcomes, these mediators should practice an approach that does not come across as preaching (Klas, 2016) or pressuring the receiver with the purpose to identify with environmentalism (Kurz et al., 2019). Rather an approach appears useful providing people the opportunity to be more sustainable in their own way.

Conclusion

Through the presented master's thesis, we identified patterns of U.S. public's judgments of diverse fictitious profile descriptions of environmentalists. Specifically, we investigated the complex influence of the profiles' multiple identity features on stereotypes (competence, friendliness, and trustworthiness), perceived typicality as environmentalist, and participants' self-identification with the described profiles. Moreover, we showed how perceiver's own group membership(s) influence these relationships. We can draw from the findings of our applied conjoint analysis, that our participants related most to and judged most positively environmentalists that were women, Asian, cleaners, political moderates, with private pro-environmental behaviors, and mainly global environmental concerns. Also, these judgements were influenced by different self-assessed categorizations. Despite some limitations, our findings extend scientific knowledge on dimension-specific perceptions of the strongly stereotyped and politicized social category of environmentalists in the U.S. Furthermore, we provide new directions regarding stereotype and impression formation research, as well as on the application of conjoint analyses in psychological research. Moreover, we offer valuable input to the environmental movement regarding message source and content in relation to the targeted audience. Since environmentalists are strongly stereotyped throughout most western countries, our findings may also be applicable to other cultural contexts. In conclusion, environmentalists meeting the middle ground may be more successful in reaching a diverse range of people and avoiding to lose further public support, as considered often as the activist's dilemma. With this, we hope that in the near future the protection of the environment will no longer be among the most polarizing and politicized issues in the U.S. and that people from all different kind of backgrounds feel included to identify (again) with *Environmentalists*.

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Annexes

A – Further information on conjoint analysis

Assumptions of conjoint analysis

To conduct a conjoint experiment, Hainmueller et al. (2014, pp.8–9,13,16) advise to adopt five basic assumptions. First, when analyzing multiple profiles, participants' responses are stable and there are no carryover effects from profile attributes viewed earlier. Second, the position of the profile within the task (e.g., in left or right table column) does not affect the responses. Third, the presented profiles are factually and completely generated at random. This means that each attribute is randomized either conditionally to or completely independent of the other attributes.

Strengths and benefits of the conjoint analysis

The conjoint analysis is a very useful tool to understand preferences / favorability among multidimensional alternatives. The aim of conjoint experiments and analysis is to identify, through descriptive and causal effect interpretations of favorability, which combinations of attributes are most influential on participants' decision and response behavior (Strezhnev et al., 2013). Moreover, conjoint analyses offer several strengths and benefits. For instance, they come closer to real-world behavior than traditional vignettes (Hainmueller et al., 2015) therefore increasing external validity (Hainmueller et al., 2014). They are also time and cost-efficient, estimating the multiple factorial effects with feasible sample sizes and large statistical power that otherwise would involve impractical designs (Hainmueller et al., 2014), while limiting social desirability (Horiuchi et al., 2020).

Statistical analysis of conjoint designs

After the presentation of at least two profile descriptions at a time, participants are asked to select or rate, for example, which article to buy (Kulshreshtha et al., 2019), whom to vote for (Doherty et al., 2019), which job candidate to select (Carey et al., 2020), or which immigrant to accept into a country (Berinsky et al., 2020). These questions represent the dependent variables of the conjoint experiment which need to be minimalistic and shouldn't consist of long scales. They can even just be the choice between one or the other. Moreover, these questions are referred to as *conjoint tasks* and serve as outcome measures to estimate the participants' "preferences" (Hainmueller, Hopkins, & Yamamoto, 2014) or "favorability"

(Leeper, Hobolt, & Tilley, 2020) through the marginal effect of each attribute value, instead of the whole profile (Stenhouse & Heinrich, 2019). *Preferences* and *favorability* refer to a statement of support for the chosen or to be rated object or person (Leeper et al., 2020).

The marginal effects indicating favorability are calculated through values known as the Average Marginal Component Effect or *AMCE* (Hainmueller et al., 2014) and Marginal Means or *MMs* (Leeper et al., 2020). "They measure the degree to which a given value of a conjoint profile feature increases, or decreases, participants' support for the overall profile, averaging across all participants and other features" (Leeper et al., 2020, p.1). Characteristic for conjoint analyses, both values provide descriptive and causal effect interpretations presented as absolute or relative favorability (Leeper et al., 2020).

B – Recruitment messages

Figure B8

Recruitment text published in social media (i.e., Facebook, Instagram, and LinkedIn)

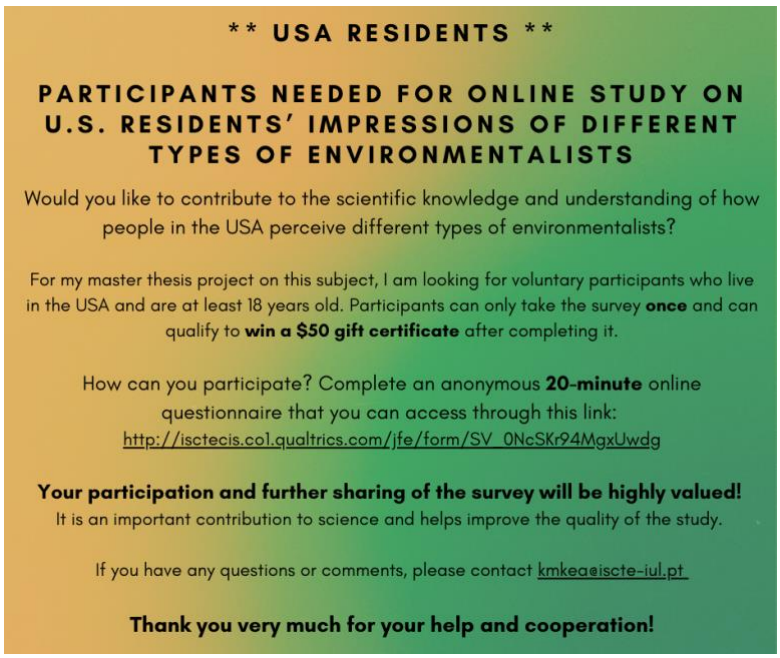
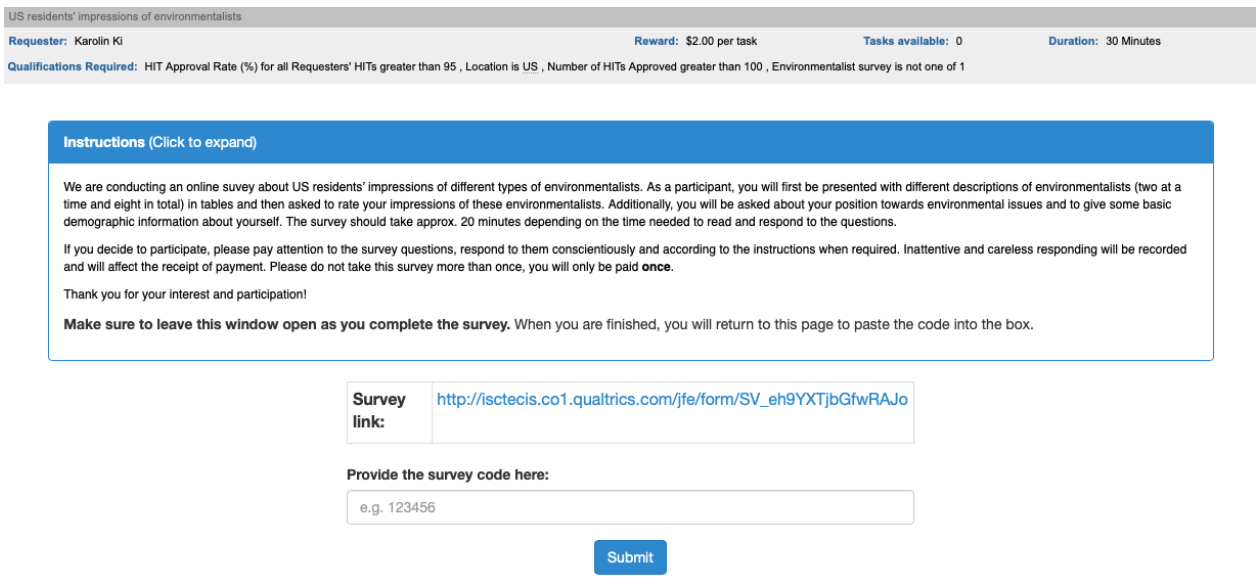


Figure B9

Recruitment text published on Amazon MTurk



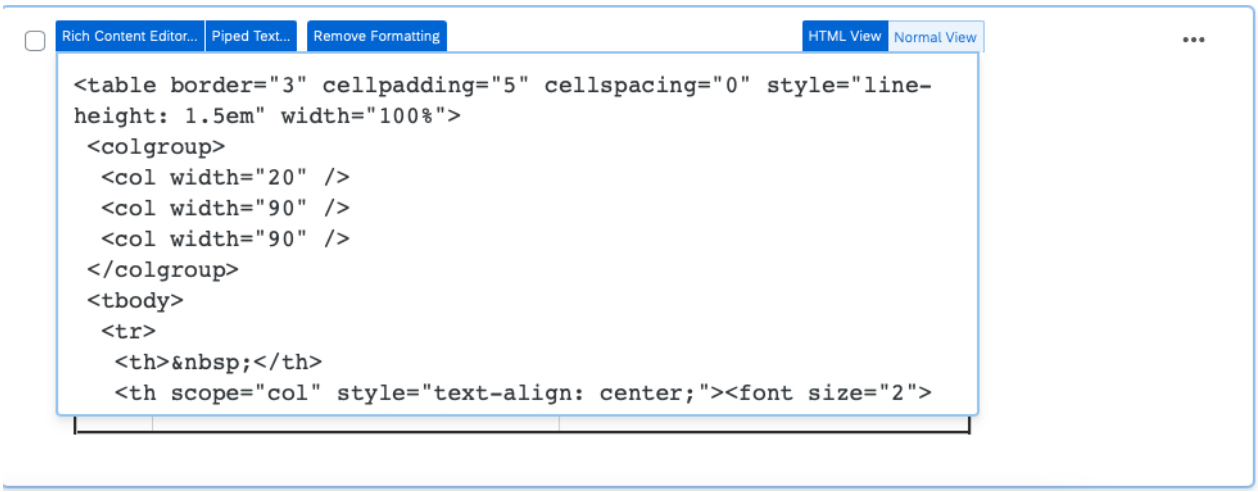
MTurk worker qualifications: 95% HIT approval rate, Location in U.S., Number of HITs approved >100, and hadn't participated before (integrated in the HIT)

MTurk control checks: Captcha check, attention checks, page timing, total duration, MTurk worker ID, and unique randomized code (integrated in Qualtrics survey)

C – Coding of conjoint table in Qualtrics

Figure C10

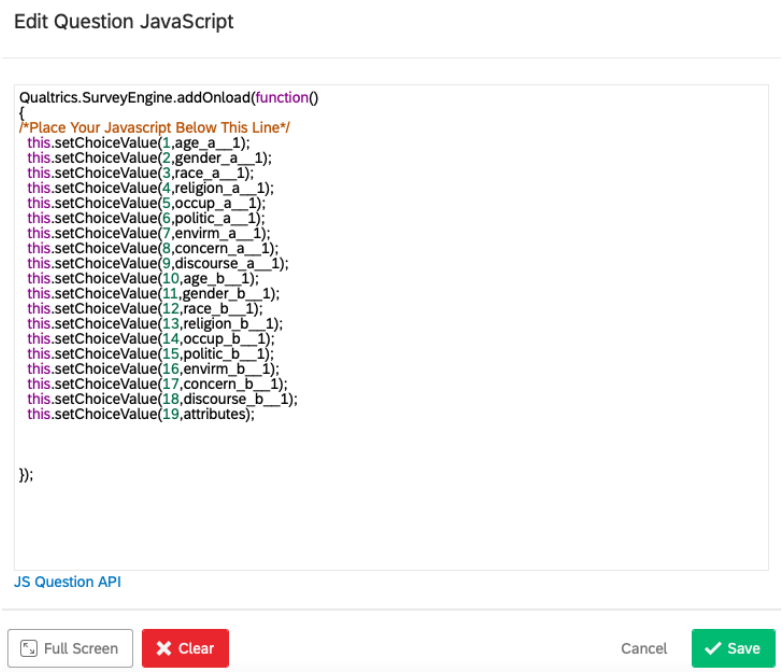
Snapshot of HTML code of the conjoint table



Note. Feel free to contact author for access to full code.

Figure C11

Snapshot of JavaScript edited in Qualtrics that is responsible for saving the presented profiles with their exact attribute order and values, which are later exported to a .csv file.

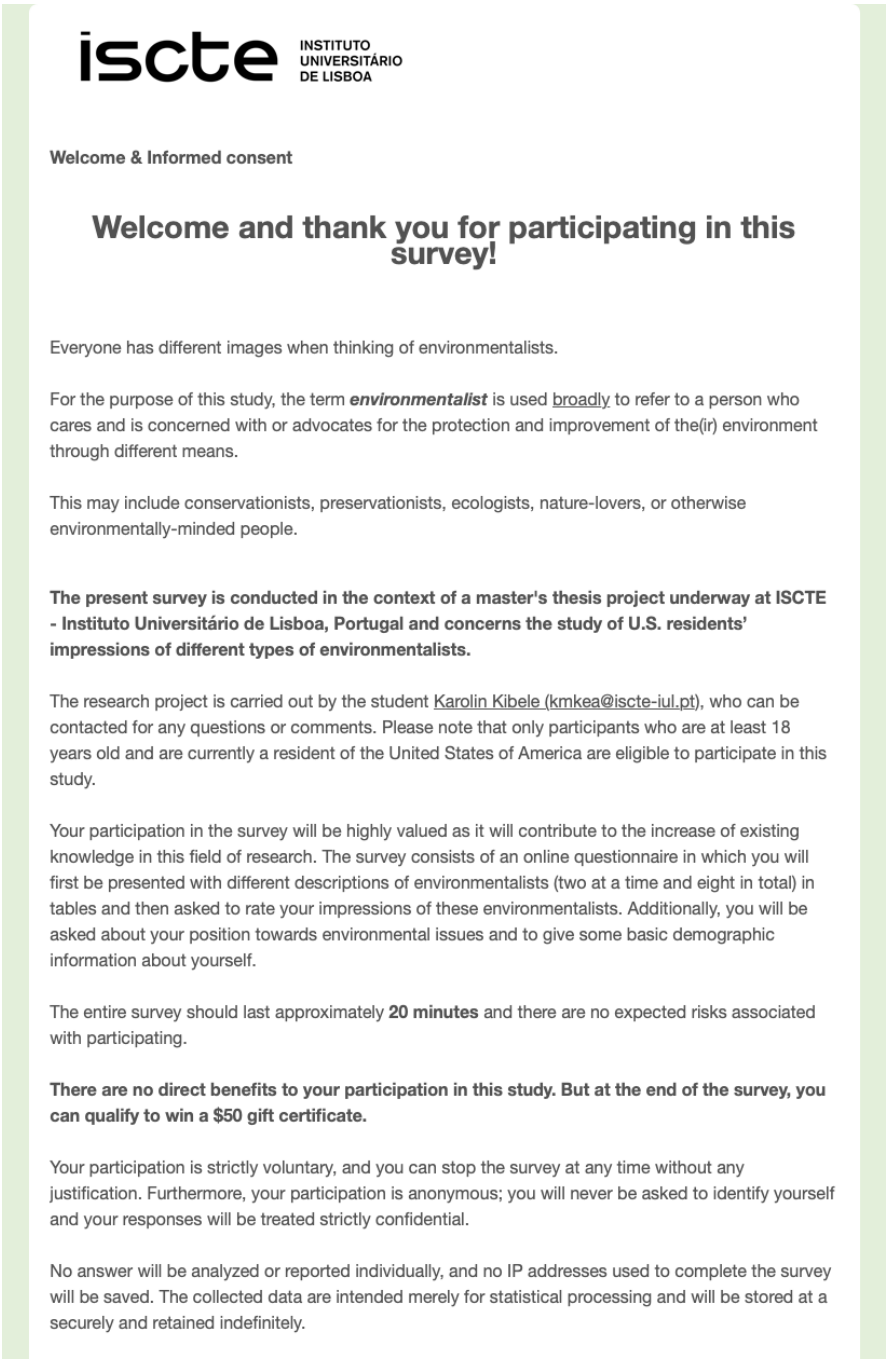


Note. Feel free to contact author for access to full code.

D – Online Qualtrics questionnaire

Figure D12

Welcome message and informed consent



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Welcome & Informed consent

Welcome and thank you for participating in this survey!

Everyone has different images when thinking of environmentalists.

For the purpose of this study, the term ***environmentalist*** is used broadly to refer to a person who cares and is concerned with or advocates for the protection and improvement of the(ir) environment through different means.

This may include conservationists, preservationists, ecologists, nature-lovers, or otherwise environmentally-minded people.

The present survey is conducted in the context of a master's thesis project underway at ISCTE - Instituto Universitário de Lisboa, Portugal and concerns the study of U.S. residents' impressions of different types of environmentalists.

The research project is carried out by the student Karolin Kibele (kmkea@iscte-iul.pt), who can be contacted for any questions or comments. Please note that only participants who are at least 18 years old and are currently a resident of the United States of America are eligible to participate in this study.

Your participation in the survey will be highly valued as it will contribute to the increase of existing knowledge in this field of research. The survey consists of an online questionnaire in which you will first be presented with different descriptions of environmentalists (two at a time and eight in total) in tables and then asked to rate your impressions of these environmentalists. Additionally, you will be asked about your position towards environmental issues and to give some basic demographic information about yourself.

The entire survey should last approximately **20 minutes** and there are no expected risks associated with participating.

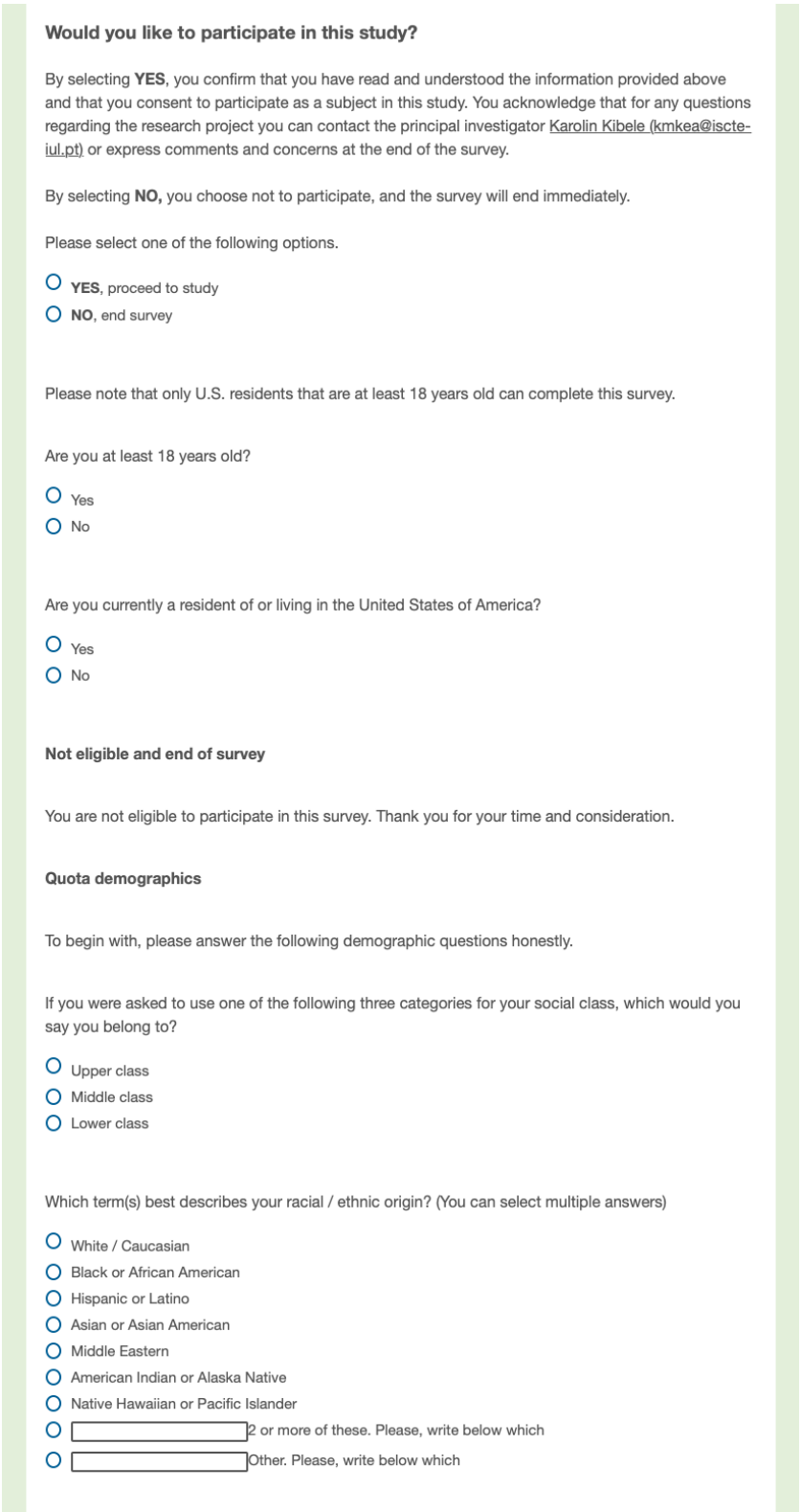
There are no direct benefits to your participation in this study. But at the end of the survey, you can qualify to win a $50 gift certificate.

Your participation is strictly voluntary, and you can stop the survey at any time without any justification. Furthermore, your participation is anonymous; you will never be asked to identify yourself and your responses will be treated strictly confidential.

No answer will be analyzed or reported individually, and no IP addresses used to complete the survey will be saved. The collected data are intended merely for statistical processing and will be stored at a securely and retained indefinitely.

Figure D13

Informed consent, eligibility, and demographical questions



Would you like to participate in this study?

By selecting **YES**, you confirm that you have read and understood the information provided above and that you consent to participate as a subject in this study. You acknowledge that for any questions regarding the research project you can contact the principal investigator Karolin Kibele (kmkea@iscte-iul.pt) or express comments and concerns at the end of the survey.

By selecting **NO,** you choose not to participate, and the survey will end immediately.

Please select one of the following options.

- ○ **YES**, proceed to study
- ○ **NO**, end survey

Please note that only U.S. residents that are at least 18 years old can complete this survey.

Are you at least 18 years old?

- ○ Yes
- ○ No

Are you currently a resident of or living in the United States of America?

- ○ Yes
- ○ No

Not eligible and end of survey

You are not eligible to participate in this survey. Thank you for your time and consideration.

Quota demographics

To begin with, please answer the following demographic questions honestly.

If you were asked to use one of the following three categories for your social class, which would you say you belong to?

- ○ Upper class
- ○ Middle class
- ○ Lower class

Which term(s) best describes your racial / ethnic origin? (You can select multiple answers)

- ○ White / Caucasian
- ○ Black or African American
- ○ Hispanic or Latino
- ○ Asian or Asian American
- ○ Middle Eastern
- ○ American Indian or Alaska Native
- ○ Native Hawaiian or Pacific Islander
- ○ [ ] 2 or more of these. Please, write below which
- ○ [ ] Other. Please, write below which

Figure D14

Example of (one of four) conjoint table and task

Study introduction

For the next part of the survey, **please imagine you were meeting the environmentalists described to you in the following**.
As explained earlier, you will see two profile descriptions at a time in form of a table.

For each pair, please take your time and read the described details very carefully.

Please pay attention, there will be attention checks which you have to answer correctly.

Conjoint 1

As mentioned earlier, the term ***environmentalist*** is used broadly to refer to a person who cares and is concerned with or advocates the protection and improvement of the(ir) environment through different means. This may include conservationists, preservationists, ecologists, nature-lovers, or otherwise environmentally minded people.

	Environmentalist A	Environmentalist B
Main environmental concern	Global environmental problems (e.g., climate change, depletion of the ozone layer, destruction of wildlife and forests, droughts & floodings)	Global environmental problems (e.g., climate change, depletion of the ozone layer, destruction of wildlife and forests, droughts & floodings)
Age	64	42
Type of pro-environmental behavior	Writes political representatives on environmental regulation issues. Signs petitions on environmental protection. Promotes pro-environmental behaviors to family and friends and by sharing information through social media.	Actively involved in environmental protection groups. Frequently participates in demonstrations, civil disobedience, or other direct actions aiming to influence environmental politics.
Occupation	Cleaner	Corporate CEO
Religiosity	Moderately religious	Not religious
Race/Ethnicity	Black/African American	Hispanic/Latinx
Argumentation style	We are already doing something positive, but we also need changes from large economic groups.	We are already doing something positive, but we also need changes from large economic groups.
Gender	Woman	Man
Political orientation	Moderate	Moderate

When we meet a new person we tend to form a first impression, even if we do not have much information about them.

Now, please rate intuitively the following impressions you have of each described environmentalist as if they were real individuals you are meeting in person.

There are no right or wrong answers (except for the attention checks).

How much do you agree or disagree with each of these statements?
Environmentalist A is...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Competent	○	○	○	○	○	○	○
Friendly	○	○	○	○	○	○	○
Trustworthy	○	○	○	○	○	○	○

How much do you agree or disagree with each of these statements?
Environmentalist B is...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Competent	○	○	○	○	○	○	○
Friendly	○	○	○	○	○	○	○
Trustworthy	○	○	○	○	○	○	○

How much do you agree or disagree with each of these statements?

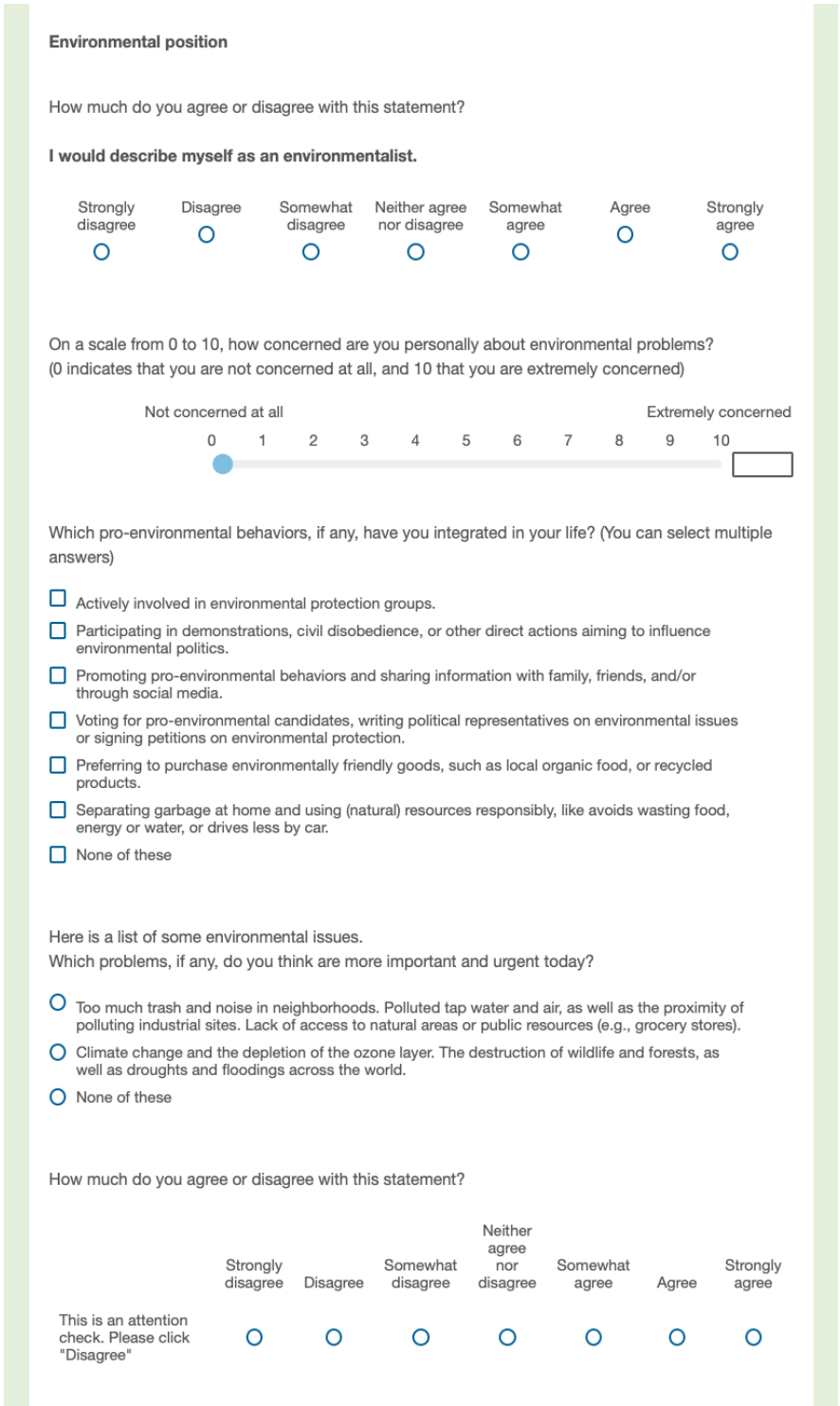
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Person A is a typical environmentalist.	○	○	○	○	○	○	○
Person B is a typical environmentalist.	○	○	○	○	○	○	○

How much do you agree or disagree with each of these statements?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I can identify myself with **Environmentalist A**.	○	○	○	○	○	○	○
I can identify myself with **Environmentalist B**.	○	○	○	○	○	○	○

Figure D15

Questions regarding participants' environmental standpoints



Environmental position

How much do you agree or disagree with this statement?

I would describe myself as an environmentalist.

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
○	○	○	○	○	○	○

On a scale from 0 to 10, how concerned are you personally about environmental problems?
(0 indicates that you are not concerned at all, and 10 that you are extremely concerned)

Not concerned at all — Extremely concerned

0 1 2 3 4 5 6 7 8 9 10

Which pro-environmental behaviors, if any, have you integrated in your life? (You can select multiple answers)

- ☐ Actively involved in environmental protection groups.
- ☐ Participating in demonstrations, civil disobedience, or other direct actions aiming to influence environmental politics.
- ☐ Promoting pro-environmental behaviors and sharing information with family, friends, and/or through social media.
- ☐ Voting for pro-environmental candidates, writing political representatives on environmental issues or signing petitions on environmental protection.
- ☐ Preferring to purchase environmentally friendly goods, such as local organic food, or recycled products.
- ☐ Separating garbage at home and using (natural) resources responsibly, like avoids wasting food, energy or water, or drives less by car.
- ☐ None of these

Here is a list of some environmental issues.
Which problems, if any, do you think are more important and urgent today?

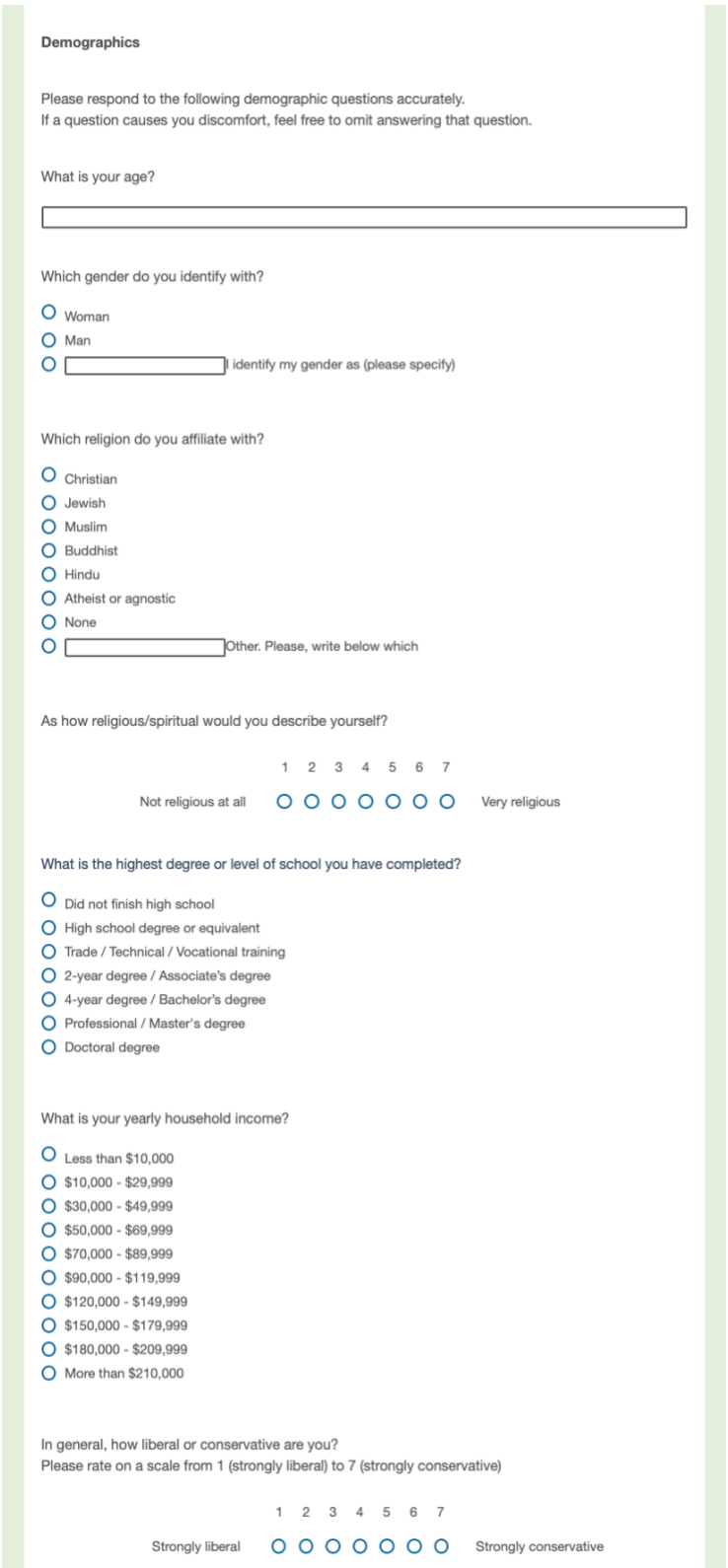
- ○ Too much trash and noise in neighborhoods. Polluted tap water and air, as well as the proximity of polluting industrial sites. Lack of access to natural areas or public resources (e.g., grocery stores).
- ○ Climate change and the depletion of the ozone layer. The destruction of wildlife and forests, as well as droughts and floodings across the world.
- ○ None of these

How much do you agree or disagree with this statement?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
This is an attention check. Please click "Disagree"	○	○	○	○	○	○	○

Figure D16

Questions regarding participants' socio-demographic data



Demographics

Please respond to the following demographic questions accurately.
If a question causes you discomfort, feel free to omit answering that question.

What is your age?

Which gender do you identify with?

- Woman
- Man
- I identify my gender as (please specify)

Which religion do you affiliate with?

- Christian
- Jewish
- Muslim
- Buddhist
- Hindu
- Atheist or agnostic
- None
- Other. Please, write below which

As how religious/spiritual would you describe yourself?

	1	2	3	4	5	6	7	
Not religious at all	○	○	○	○	○	○	○	Very religious

What is the highest degree or level of school you have completed?

- Did not finish high school
- High school degree or equivalent
- Trade / Technical / Vocational training
- 2-year degree / Associate's degree
- 4-year degree / Bachelor's degree
- Professional / Master's degree
- Doctoral degree

What is your yearly household income?

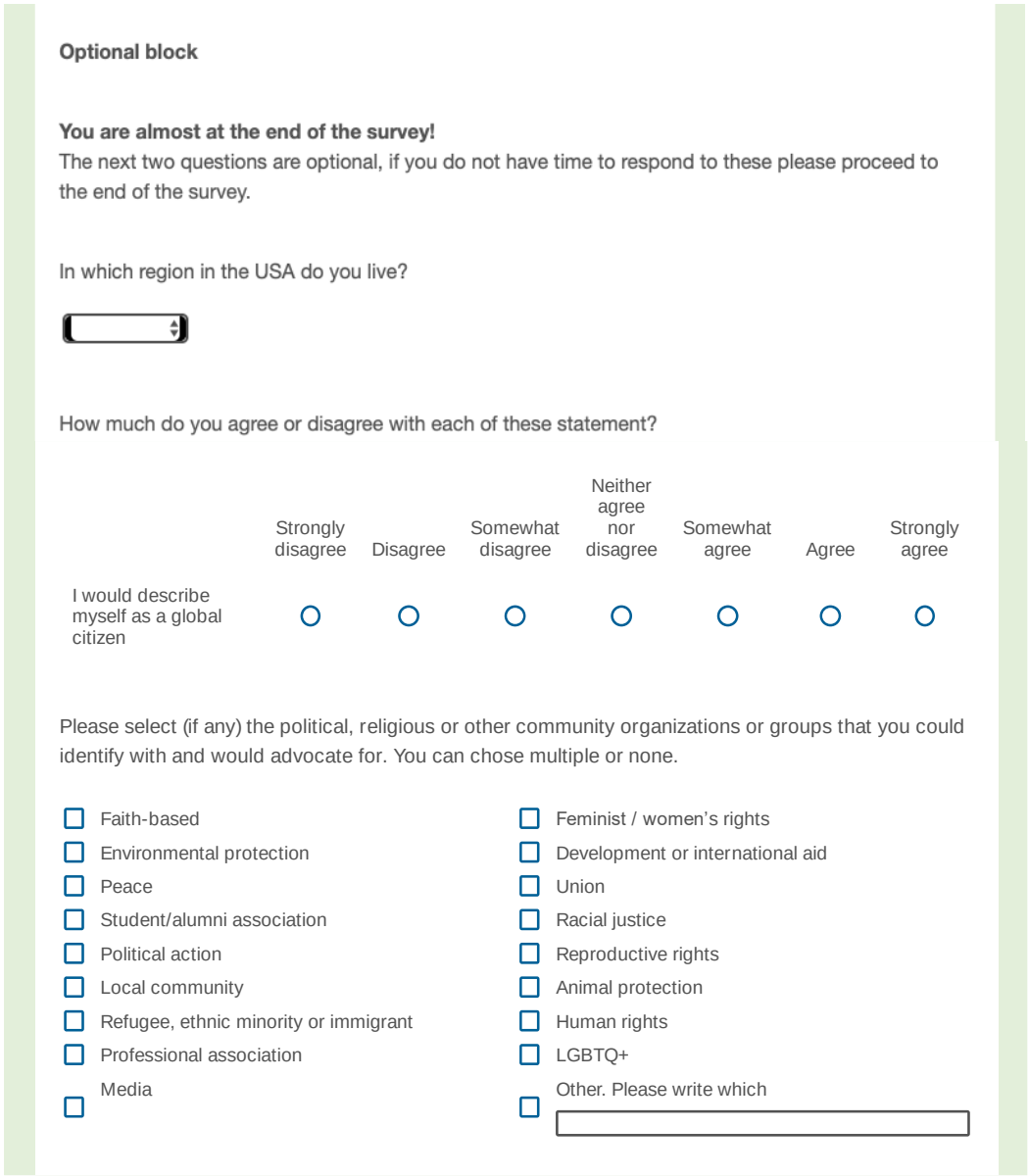
- Less than $10,000
- $10,000 - $29,999
- $30,000 - $49,999
- $50,000 - $69,999
- $70,000 - $89,999
- $90,000 - $119,999
- $120,000 - $149,999
- $150,000 - $179,999
- $180,000 - $209,999
- More than $210,000

In general, how liberal or conservative are you?
Please rate on a scale from 1 (strongly liberal) to 7 (strongly conservative)

	1	2	3	4	5	6	7	
Strongly liberal	○	○	○	○	○	○	○	Strongly conservative

Figure D17

Questions that were optional for participants to respond to



Optional block

You are almost at the end of the survey!
The next two questions are optional, if you do not have time to respond to these please proceed to the end of the survey.

In which region in the USA do you live?

How much do you agree or disagree with each of these statement?

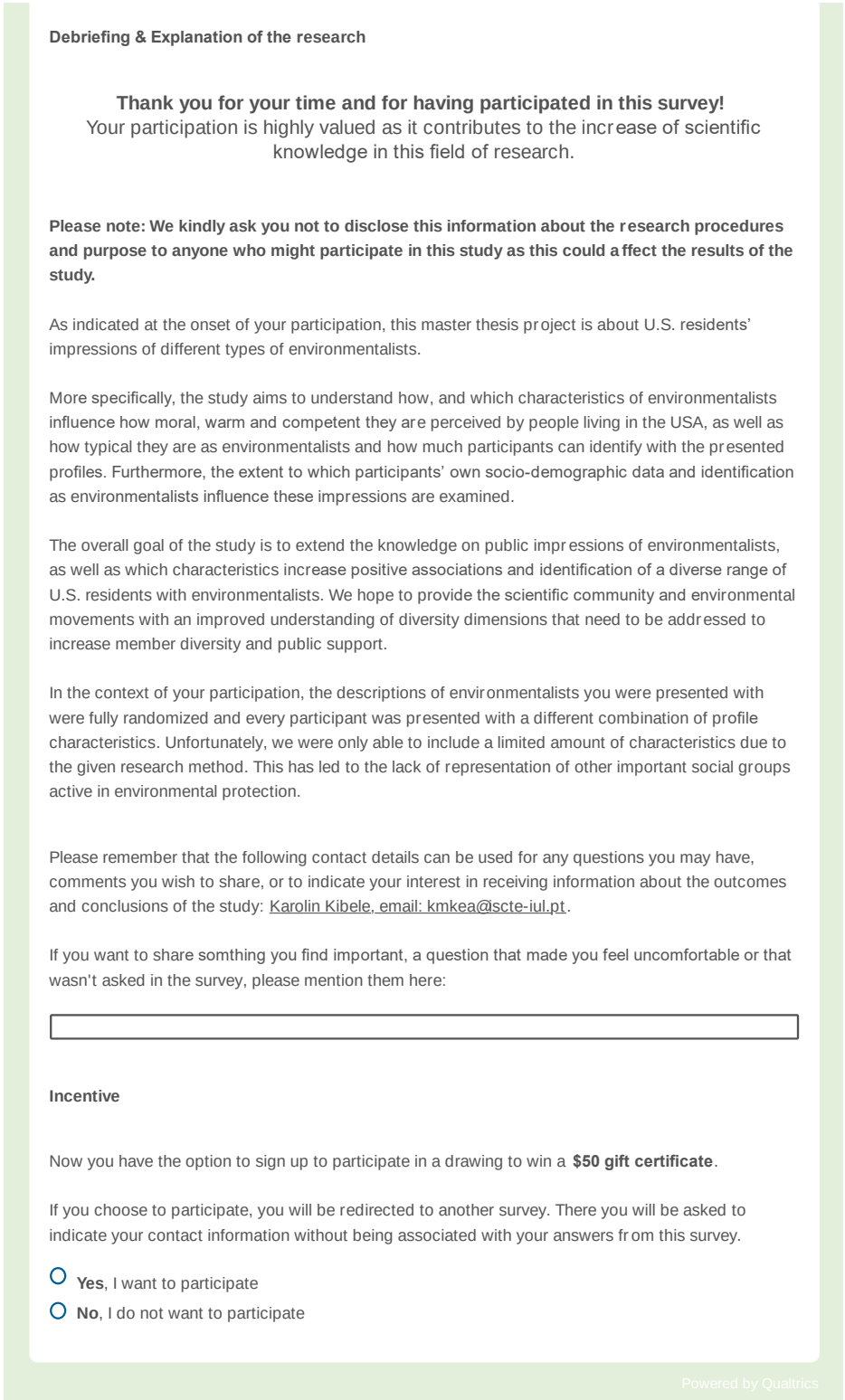
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I would describe myself as a global citizen	○	○	○	○	○	○	○

Please select (if any) the political, religious or other community organizations or groups that you could identify with and would advocate for. You can chose multiple or none.

- ☐ Faith-based
- ☐ Environmental protection
- ☐ Peace
- ☐ Student/alumni association
- ☐ Political action
- ☐ Local community
- ☐ Refugee, ethnic minority or immigrant
- ☐ Professional association
- ☐ Media
- ☐ Feminist / women's rights
- ☐ Development or international aid
- ☐ Union
- ☐ Racial justice
- ☐ Reproductive rights
- ☐ Animal protection
- ☐ Human rights
- ☐ LGBTQ+
- ☐ Other. Please write which

Figure D18

Debriefing, explanation of the research, and option to leave comments as well as sign up for the study incentive



Debriefing & Explanation of the research

Thank you for your time and for having participated in this survey!
Your participation is highly valued as it contributes to the increase of scientific knowledge in this field of research.

Please note: We kindly ask you not to disclose this information about the research procedures and purpose to anyone who might participate in this study as this could affect the results of the study.

As indicated at the onset of your participation, this master thesis project is about U.S. residents' impressions of different types of environmentalists.

More specifically, the study aims to understand how, and which characteristics of environmentalists influence how moral, warm and competent they are perceived by people living in the USA, as well as how typical they are as environmentalists and how much participants can identify with the presented profiles. Furthermore, the extent to which participants' own socio-demographic data and identification as environmentalists influence these impressions are examined.

The overall goal of the study is to extend the knowledge on public impressions of environmentalists, as well as which characteristics increase positive associations and identification of a diverse range of U.S. residents with environmentalists. We hope to provide the scientific community and environmental movements with an improved understanding of diversity dimensions that need to be addressed to increase member diversity and public support.

In the context of your participation, the descriptions of environmentalists you were presented with were fully randomized and every participant was presented with a different combination of profile characteristics. Unfortunately, we were only able to include a limited amount of characteristics due to the given research method. This has led to the lack of representation of other important social groups active in environmental protection.

Please remember that the following contact details can be used for any questions you may have, comments you wish to share, or to indicate your interest in receiving information about the outcomes and conclusions of the study: Karolin Kibele, email: kmkea@iscte-iul.pt.

If you want to share somthing you find important, a question that made you feel uncomfortable or that wasn't asked in the survey, please mention them here:

Incentive

Now you have the option to sign up to participate in a drawing to win a **$50 gift certificate**.

If you choose to participate, you will be redirected to another survey. There you will be asked to indicate your contact information without being associated with your answers from this survey.

- **Yes**, I want to participate
- **No**, I do not want to participate

Powered by Qualtrics

E – Participants' comments from the end of the survey

Table E2

Participants' comments received by e-mail or through the comments section at the survey end

Private e-mail	[…] THINKING Individuals who want to "educate" and influence change. […] I could have saved some typing if I had said this up front: Please don't make the survey answers dependent on reactions to Gender, Race, Age, or Job Title…. Yes, they will always be a part of some/many people's decision, but we won't change that…. Make the questionnaire decisions based on factual content… More than the Person bringing the message. […]
	[…] I strive not to care not about the race, rank, age, and gender of people: What matters is sincerity and constructive competence, that is, the ability to solve problems. […] You can recognize a true environmentalist by the house she lives in and the vehicle she drives, Which is to say, if she is quite materialistic, she is not an enviro at heart.
Convenience sample	It appeared to me that some of the questions were intended to "reveal" a bias toward "Male vs, Female" rather than the question of Good Citizenship and promoting an Healthy environment. AND I have never seen a "Demonstration" that didn't leave a mess behind for others to clean up... Using the Environment to cause friction (Hate?) between peoples is not right in my mind.
	the noise pollution thing swayed my answers considerably because i think people who complain about that are usually annoying
	...I found it odd that some of the environmentalists were 23 years old and CEOs. Also several occupations were clerks, that seemed odd too.
	As far as the environment is concerned, I think everyone should do a good job in their own environmental sanitation. This is a big problem involving everyone and everyone is responsible
	Everyone is responsible for protecting the environment
	I could not answers questions on the people if I don't know them. Just giving me their traits has nothing to do about their trustworthiness or compentcy
	It seemed as though most of the conservative profiles were POC which didn't feel so realistic to me. I think if you vote conservative but claim to care about the environment it could be a conflict of interest.
	Unfortunately too many good causes have been hijacked by extreme ideologies that demand thought compliance - if not they label and persecute those with the

temerity to have their own point of view. So called “Environmentalists” are big offenders here! Lead by example works much better than saying ‘ Let me tell you how you must live and what you must do’!
Local and global concerns were a bit broad. What wasn't mentioned as a main concern was the industrialization of farmland and commodification of the earth by big businesses +the need for big business to cut their carbon emissions.
the question that put both spirituality and religiosity together made that question difficult to answer - I would identify as fairly spritual, but not very religious.
For the question: "Which problems, if any, do you think are more important and urgent today?" I found the two of roughly equal importance, but this wasn't an option the latter seemed to contain many parts of the former so I chose that one.
I was having trouble even imagining a politically conservative environmentalist. And an even harder time imagining a politically conservative, non-binary, religious environmentalist. I also answered "neutral" for each of the 3 questions concerning my feelings about each of these people because I don't know anything about them other than these surface characteristics, which really don't have anything to do with how likeable and competent they are.
It is impossible to tell if a person is friendly, competent or trustworthy by descriptors provided, all people are different and to be able to give an opinion on those characteristics one would have to meet them
This was saturated in identity politics bullshit which is typical of left wing extremists
The display of the environmentalist's positions made it impossible to ascertain their 'friendliness' or 'trustworthyness' as there was no information that alluded to those qualities
Should have a back button. Also the goal of the survey became apparent so it made me question my answers a bit more.
I found myself straddling the line between A and B as I don’t. Do social media and found agreement on both and disagreement with both. Nice job!
I had a difficult time judging someone's competence or friendliness without knowing and experiencing them.
I didn’t find there was enough information provided to decide if someone was friendly or trustworthy. I have known conservatives to be just as friendly as liberals, and i have known political activists to be both trustworthy and untrustworthy. I had to remain neutral on all those questions.
Taking good care of the environment starts from me

Amazon MTurk sample	I wanted to reach out and let you know that there are 6 flags on this HIT. You should expect a high number of falsified responses. You're hiring gig workers and not paying them. You deserve what you get. (private MTurk email when quotas were still present)
	Hi, I just completed the survey. I am a diligent and fast worker who ensures the quality of each survey I do. Which is reflected in the over 10000 hits I've done with a high approval raiting. When I completed this survey received this message. You have spent insufficient time answering the questions and will not be paid.
	By insufficient time, is meant less than one third of the time it takes the questionnaire creater to read the items. This is very wrong to do and workers will not do your surveys if after they complete your survey they receive this message. Many of us do this for a living and are faster pace while giving our time and hard work to the survey. I can say that in 10000 hits that I've done I have never once received this after completing a survey. It is very frustrating. (private MTurk email when quotas were still present)
	Delete my data, thanks. You realize some of us do these kinds of tasks every day and we have faster reading speeds than average? Absolutely ridiculous. (private MTurk email when quotas were still present)
	hello and good morning I recently did US residents' impressions of environmentalists and I was kicked out from doing for doing it too quick. I am a fast reader and was shocked that having a good talent prevented me from completing the survey especially something I am passionate about. Is their any way I can be compensated for the time or be able to complete it again? (private MTurk email when quotas were still present)
	Can you increase the time allotment for this study so participants don't feel rushed? It really makes a difference to us when given a 20-minute versus a 60 or 90-minute time limit.
	Good, awesome, useful, nice study, interesting, nothing, informative
	buying anything is the opposite of environmentally active. Buying anything is assault. Buying organic my be assault but not murder but it is still assault
	You misspelled something (somthing) in the sentence above this entry.
	Do you know who they are, what keeps them awake at night, and what brought ... Why is it important to ask good survey questions?
	I care a lot about real environmental problems (namely the appalling amount of garbage in our water, food, and air, as well as increasing exposure to

electromagnetic pollution). However, I'm not comfortable being labeled as an environmentalist because so many of them focus on imaginary problems like climate change.
Great questions. Thanks for giving this opportunity to explore more about the environment related knowledge.
I'm sorry but this survey was created by someone who has never actually had a conversation with a conservative or even a moderate. "Latinx" is not a thing except on twitter and in the increasingly bizarre bubble of a college campus. Nobody but the most extreme political left is tying economic policy to environmentalism. That is literal propaganda being used by the political extremists who have hijacked the entire environmental movement. This entire survey seems like it was created by someone like that, or by a "true believer." I don't see how anything accurate can be concluded by research that is done by individuals who are completely out of touch with how everyone else lives and thinks off twitter and outside of college campuses and champagne socialist coffee shops. (34, Male, mixed, middle class, political moderate)
important social groups active in environmental protection.
We hope to provide the scientific community and environmental movements with an improved understanding of diversity dimensions that need to be addressed to increase member diversity and public support.
I saw some worker reviews saying they allegedly answered too quickly and wouldn't be paid. I hope that you're not being too strict because Mturk workers tend to answer things faster than average since we have a lot of experience with work like this. Please be considerate of this in the future, thank you!
This survey was very well about US residents' impressions of different types of environmentalists.

F – Display frequencies, descriptives, and correlations

Figure F19

Display frequencies of conjoint attribute values in conjoint table

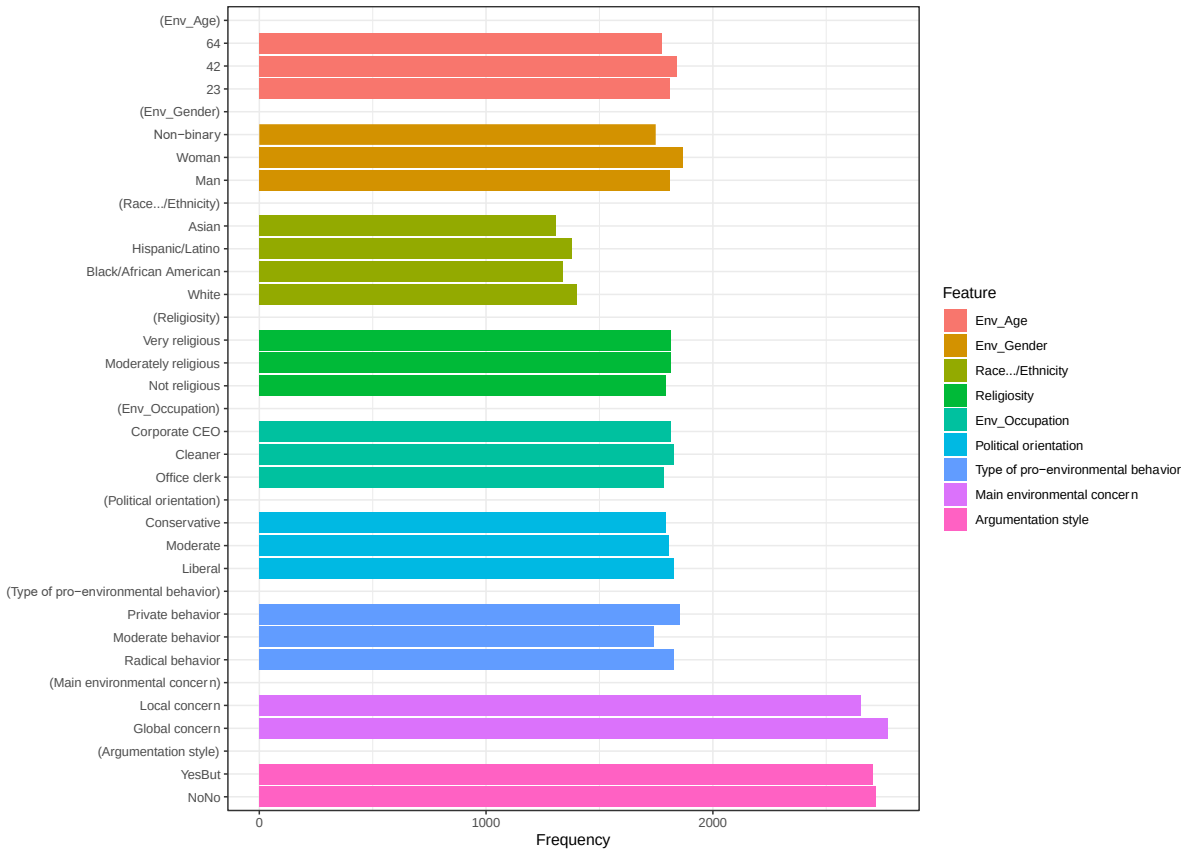


Table F3

Descriptive statistics and Correlations for the variables assessed in the conjoint experiment (DVs and subgroup variables)

Variables	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Age	34.26	12.15	-																
2 Gender identity	-	-	.02	-															
3 Self-assessed social class	-	-	.01	-.11***	-														
4 Race/Ethnicity	-	-	-.09***	.04**	-.03*	-													
5 Majority vs. Minority	-	-	-.08***	.07***	-.04**	.77**	-												
6 Religiosity/ Spirituality	3.89	2.20	.01	-.16***	.14***	-.01	.03	-											
7 Political Orientation	3.65	1.86	.00	-.10***	.10***	-.00	.04**	.41***	-										
8 Yearly Household income	-	-	.14***	-.08***	.39***	-.02	-.08***	.02	.03*	-									
9 Sample source	-	-	.25***	.21***	-.20***	.00	.09***	.03*	.07***	-.19***	-								
10 Self-identification as environmentalist	5.16	1.30	.02	-.03*	.14***	-.09***	-.10***	.16***	-.10***	.04*	-.03*	-							
11 Level of environmental concern	7.28	1.98	.07***	-.00	.11***	-.02	-.04**	.02	-.28***	.05***	-.07***	.67**	-						

12 Level of pro-environmental behaviors	7.61	4.86	.02	-.04**	.11***	-.03*	-.04**	.09***	-.25***	.05***	-.11***	.54**	.52**	-					
13 Main environmental concern	-	-	.02	.11***	.02	-.03	-.08***	-.21***	-.26***	.04**	.00	-.04**	.05***	.01	-				
14 Competence	5.35	1.23	-.02	-.04*	.00	.00	.00	-.00	-.08***	.01	.04**	.21***	.247	.18***	-.02	-			
15 Friendliness	5.20	1.23	-.05***	-.06***	.03*	.01	.04**	.07***	.00	-.01	.08***	.21***	.19***	.13***	-.08***	.60**	-		
16 Trustworthiness	5.22	1.25	-.02	-.07***	.05***	.02	.06***	.08***	.00	.01	.08***	.23***	.20***	.13***	-.09***	.61**	.74**	-	
17 Typicality	5.01	1.38	-.04**	-.06***	.05***	.06***	.09***	.13***	.10***	-.02	.04**	.17***	.12***	.09***	-.094	.42***	.45***	.48**	-
18 Identification	4.61	1.58	-.05***	-.04**	.12***	-.00	.05***	.15***	.03*	-.02	.01	.37***	.29***	.22***	-.10***	.43***	.50**	.52**	.54**

Note. *M*=Means, *SD*=Standard deviation. Correlation coefficients. *p < .05. **p < .01 ***p < .001

G – Further results of the conjoint analyses

Assumptions testing in this study

Applying the checks recommended by Hainmueller et al. (2014) showed that all three assumptions were met. First, there were no differences if environmentalists' profiles were presented on the left or right side of the conjoint table, indicating that there were no carry-over effects (Competence, p=.313; Friendliness, p=.138; Trustworthiness, p=.360; Typicality, p=.546; Identification, p=.430). Second, no differences were found between the presented tables, indicating that there were no table order effects (Competence, p=.770; Friendliness, p=.764; Trustworthiness, p=.310; Typicality, p=.954; Identification, p=.952). Third, the last assumption was guaranteed through the randomization code generated for the conjoint experiment in Qualtrics. Nevertheless, balance checks of the participants' variables and display frequencies of the attribute values (see Annex F) confirmed the assumption was met.

Estimates (visualized in the plots integrated in thesis)

Figure G20

Marginal Mean calculations from R for the profile ratings on environmentalists' Competence

	outcome	statistic	feature	level	estimate	std.error	z	p	lower	upper
1	Rate_Competence	mm	Age	23	5.378662	0.04076150	131.9545	0	5.298771	5.458553
2	Rate_Competence	mm	Age	42	5.357763	0.04303826	124.4884	0	5.273410	5.442117
3	Rate_Competence	mm	Age	64	5.313029	0.04337379	122.4940	0	5.228018	5.398040
4	Rate_Competence	mm	Gender identity	Man	5.376451	0.04077368	131.8608	0	5.296536	5.456366
5	Rate_Competence	mm	Gender identity	Woman	5.417247	0.04054369	133.6150	0	5.337783	5.496711
6	Rate_Competence	mm	Gender identity	Non-binary	5.251144	0.04466433	117.5691	0	5.163604	5.338685
7	Rate_Competence	mm	Race/Ethnicity	White	5.342612	0.04263035	125.3241	0	5.259058	5.426166
8	Rate_Competence	mm	Race/Ethnicity	Black/African American	5.351271	0.04715871	113.4737	0	5.258841	5.443700
9	Rate_Competence	mm	Race/Ethnicity	Hispanic/Latino	5.351234	0.04321433	123.8301	0	5.266535	5.435932
10	Rate_Competence	mm	Race/Ethnicity	Asian	5.355777	0.04717806	113.5226	0	5.263309	5.448244
11	Rate_Competence	mm	Religiosity	Not religious	5.320134	0.04483609	118.6574	0	5.232257	5.408011
12	Rate_Competence	mm	Religiosity	Moderately religious	5.371901	0.04102873	130.9302	0	5.291486	5.452316
13	Rate_Competence	mm	Religiosity	Very religious	5.357930	0.04077493	131.4025	0	5.278012	5.437847
14	Rate_Competence	mm	Occupation	Office clerk	5.350730	0.03909970	136.8484	0	5.274096	5.427364
15	Rate_Competence	mm	Occupation	Cleaner	5.282978	0.04405745	119.9111	0	5.196627	5.369329
16	Rate_Competence	mm	Occupation	Corporate CEO	5.417080	0.04446108	121.8387	0	5.329938	5.504222
17	Rate_Competence	mm	Political orientation	Liberal	5.370208	0.04083074	131.5236	0	5.290181	5.450235
18	Rate_Competence	mm	Political orientation	Moderate	5.343490	0.04149142	128.7854	0	5.262169	5.424812
19	Rate_Competence	mm	Political orientation	Conservative	5.336308	0.04424976	120.5952	0	5.249580	5.423036
20	Rate_Competence	mm	Type of pro-environmental behavior	Radical behavior	5.292896	0.04465393	118.5315	0	5.205376	5.380416
21	Rate_Competence	mm	Type of pro-environmental behavior	Moderate behavior	5.359563	0.04246865	126.2005	0	5.276326	5.442800
22	Rate_Competence	mm	Type of pro-environmental behavior	Private behavior	5.397733	0.04166200	129.5601	0	5.316077	5.479389
23	Rate_Competence	mm	Main environmental concern	Global concern	5.390112	0.03830064	140.7316	0	5.315044	5.465180
24	Rate_Competence	mm	Main environmental concern	Local concern	5.308330	0.03985584	133.1883	0	5.230214	5.386446
25	Rate_Competence	mm	Argumentation style	NoNo	5.339831	0.03901047	136.8820	0	5.263372	5.416290
26	Rate_Competence	mm	Argumentation style	YesBut	5.360444	0.03771155	142.1433	0	5.286530	5.434357

Note. The "estimate" represents the Marginal Mean.

Figure G21

Marginal Mean calculations from R for the profile ratings on environmentalists' Friendliness

	outcome	statistic	feature	level	estimate	std.error	z	p	lower	upper
1	Rate_Friendly	mm	Age	23	5.240464	0.04032917	129.9423	0	5.161421	5.319508
2	Rate_Friendly	mm	Age	42	5.216612	0.04051644	128.7530	0	5.137202	5.296023
3	Rate_Friendly	mm	Age	64	5.142696	0.04151810	123.8664	0	5.061322	5.224070
4	Rate_Friendly	mm	Gender identity	Man	5.193477	0.04017147	129.2827	0	5.114742	5.272212
5	Rate_Friendly	mm	Gender identity	Woman	5.273701	0.03983692	132.3823	0	5.195622	5.351780
6	Rate_Friendly	mm	Gender identity	Non-binary	5.129291	0.04379790	117.1127	0	5.043448	5.215133
7	Rate_Friendly	mm	Race/Ethnicity	White	5.204854	0.04215732	123.4626	0	5.122227	5.287481
8	Rate_Friendly	mm	Race/Ethnicity	Black/African American	5.213752	0.04514934	115.4779	0	5.125261	5.302243
9	Rate_Friendly	mm	Race/Ethnicity	Hispanic/Latino	5.193759	0.04345524	119.5197	0	5.108588	5.278930
10	Rate_Friendly	mm	Race/Ethnicity	Asian	5.188982	0.04470066	116.0829	0	5.101371	5.276594
11	Rate_Friendly	mm	Religiosity	Not religious	5.158951	0.04191907	123.0693	0	5.076792	5.241111
12	Rate_Friendly	mm	Religiosity	Moderately religious	5.244077	0.04003978	130.9717	0	5.165601	5.322554
13	Rate_Friendly	mm	Religiosity	Very religious	5.197687	0.04112841	126.3770	0	5.117077	5.278297
14	Rate_Friendly	mm	Occupation	Office clerk	5.225028	0.04031710	129.5983	0	5.146008	5.304048
15	Rate_Friendly	mm	Occupation	Cleaner	5.224412	0.04218808	123.8362	0	5.141724	5.307099
16	Rate_Friendly	mm	Occupation	Corporate CEO	5.152066	0.04132256	124.6793	0	5.071075	5.233057
17	Rate_Friendly	mm	Political orientation	Liberal	5.201533	0.04039089	128.7799	0	5.122369	5.280698
18	Rate_Friendly	mm	Political orientation	Moderate	5.225485	0.03784386	138.0801	0	5.151312	5.299657
19	Rate_Friendly	mm	Political orientation	Conservative	5.174010	0.04446878	116.3515	0	5.086853	5.261167
20	Rate_Friendly	mm	Type of pro-environmental behavior	Radical behavior	5.134973	0.04284252	119.8569	0	5.051003	5.218942
21	Rate_Friendly	mm	Type of pro-environmental behavior	Moderate behavior	5.175761	0.04075622	126.9932	0	5.095880	5.255642
22	Rate_Friendly	mm	Type of pro-environmental behavior	Private behavior	5.288181	0.04074980	129.7720	0	5.208313	5.368049
23	Rate_Friendly	mm	Main environmental concern	Global concern	5.221581	0.03708137	140.8141	0	5.148902	5.294259
24	Rate_Friendly	mm	Main environmental concern	Local concern	5.178289	0.03761904	137.6507	0	5.104557	5.252021
25	Rate_Friendly	mm	Argumentation style	NoNo	5.168812	0.03817605	135.3941	0	5.093988	5.243636
26	Rate_Friendly	mm	Argumentation style	YesBut	5.232163	0.03643520	143.6019	0	5.160751	5.303574

Note. The "estimate" represents the Marginal Mean.

Figure G22

Marginal Mean calculations from R for the profile ratings on environmentalists' Trustworthiness

	outcome	statistic	feature	level	estimate	std.error	z	p	lower	upper
1	Rate_Trust	mm	Age	23	5.242123	0.04099303	127.8784	0	5.161778	5.322468
2	Rate_Trust	mm	Age	42	5.218241	0.04200192	124.2382	0	5.135919	5.300563
3	Rate_Trust	mm	Age	64	5.188945	0.04342587	119.4897	0	5.103832	5.274058
4	Rate_Trust	mm	Gender identity	Man	5.237700	0.04135709	126.6458	0	5.156642	5.318759
5	Rate_Trust	mm	Gender identity	Woman	5.303160	0.03952998	134.1554	0	5.225683	5.380637
6	Rate_Trust	mm	Gender identity	Non-binary	5.102403	0.04568341	111.6905	0	5.012865	5.191941
7	Rate_Trust	mm	Race/Ethnicity	White	5.214133	0.04463480	116.8176	0	5.126650	5.301615
8	Rate_Trust	mm	Race/Ethnicity	Black/African American	5.231689	0.04565218	114.5989	0	5.142212	5.321166
9	Rate_Trust	mm	Race/Ethnicity	Hispanic/Latino	5.204644	0.04464098	116.5889	0	5.117150	5.292139
10	Rate_Trust	mm	Race/Ethnicity	Asian	5.216526	0.04624842	112.7936	0	5.125881	5.307172
11	Rate_Trust	mm	Religiosity	Not religious	5.208589	0.04336854	120.1006	0	5.123588	5.293590
12	Rate_Trust	mm	Religiosity	Moderately religious	5.225344	0.04176300	125.1190	0	5.143490	5.307198
13	Rate_Trust	mm	Religiosity	Very religious	5.215859	0.04158524	125.4257	0	5.134353	5.297365
14	Rate_Trust	mm	Occupation	Office clerk	5.241863	0.04178583	125.4459	0	5.159964	5.323762
15	Rate_Trust	mm	Occupation	Cleaner	5.248495	0.04329871	121.2160	0	5.163631	5.333359
16	Rate_Trust	mm	Occupation	Corporate CEO	5.159780	0.04401756	117.2209	0	5.073507	5.246052
17	Rate_Trust	mm	Political orientation	Liberal	5.226177	0.04184728	124.8869	0	5.144158	5.308197
18	Rate_Trust	mm	Political orientation	Moderate	5.260388	0.04049251	129.9101	0	5.181024	5.339752
19	Rate_Trust	mm	Political orientation	Conservative	5.162856	0.04451212	115.9876	0	5.075613	5.250098
20	Rate_Trust	mm	Type of pro-environmental behavior	Radical behavior	5.169399	0.04244225	121.7984	0	5.086214	5.252584
21	Rate_Trust	mm	Type of pro-environmental behavior	Moderate behavior	5.186100	0.04302408	120.5395	0	5.101774	5.270426
22	Rate_Trust	mm	Type of pro-environmental behavior	Private behavior	5.291959	0.04127864	128.2009	0	5.211054	5.372864
23	Rate_Trust	mm	Main environmental concern	Global concern	5.246121	0.03870194	135.5519	0	5.170266	5.321975
24	Rate_Trust	mm	Main environmental concern	Local concern	5.185827	0.03840048	135.0459	0	5.110564	5.261091
25	Rate_Trust	mm	Argumentation style	NoNo	5.210004	0.03862586	134.8838	0	5.134298	5.285709
26	Rate_Trust	mm	Argumentation style	YesBut	5.223290	0.03835164	136.1947	0	5.148122	5.298458

Note. The "estimate" represents the Marginal Mean.

Figure G23

Marginal Mean calculations from R for the profile ratings on the profiles' Typicality as environmentalist

	outcome	statistic	feature	level	estimate	std.error	z	p	lower	upper
1	Rate_Typicality	mm	Age	23	5.027087	0.04422672	113.66629	0	4.940404	5.113770
2	Rate_Typicality	mm	Age	42	5.028230	0.04320458	116.38187	0	4.943551	5.112910
3	Rate_Typicality	mm	Age	64	4.963903	0.04329184	114.66141	0	4.879053	5.048753
4	Rate_Typicality	mm	Gender identity	Man	4.999447	0.04404419	113.50981	0	4.913122	5.085772
5	Rate_Typicality	mm	Gender identity	Woman	5.062667	0.04320254	117.18449	0	4.977992	5.147343
6	Rate_Typicality	mm	Gender identity	Non-binary	4.954805	0.04611699	107.43990	0	4.864418	5.045193
7	Rate_Typicality	mm	Race/Ethnicity	White	5.015703	0.04766610	105.22578	0	4.922279	5.109127
8	Rate_Typicality	mm	Race/Ethnicity	Black/African American	4.973094	0.04840508	102.73910	0	4.878222	5.067966
9	Rate_Typicality	mm	Race/Ethnicity	Hispanic/Latino	4.979681	0.04725813	105.37193	0	4.887056	5.072305
10	Rate_Typicality	mm	Race/Ethnicity	Asian	5.060444	0.04692649	107.83769	0	4.968470	5.152418
11	Rate_Typicality	mm	Religiosity	Not religious	5.025098	0.04382034	114.67500	0	4.939211	5.110984
12	Rate_Typicality	mm	Religiosity	Moderately religious	5.022039	0.04408073	113.92821	0	4.935642	5.108435
13	Rate_Typicality	mm	Religiosity	Very religious	4.973568	0.04451201	111.73542	0	4.886326	5.060810
14	Rate_Typicality	mm	Occupation	Office clerk	5.071268	0.04161078	121.87390	0	4.989713	5.152824
15	Rate_Typicality	mm	Occupation	Cleaner	5.056924	0.04386066	115.29521	0	4.970959	5.142889
16	Rate_Typicality	mm	Occupation	Corporate CEO	4.893113	0.04837491	101.14980	0	4.798300	4.987926
17	Rate_Typicality	mm	Political orientation	Liberal	5.087623	0.04281044	118.84072	0	5.003716	5.171530
18	Rate_Typicality	mm	Political orientation	Moderate	5.081440	0.03932769	129.20772	0	5.004360	5.158521
19	Rate_Typicality	mm	Political orientation	Conservative	4.849414	0.05181832	93.58494	0	4.747852	4.950976
20	Rate_Typicality	mm	Type of pro-environmental behavior	Radical behavior	4.969399	0.04534367	109.59410	0	4.880527	5.058271
21	Rate_Typicality	mm	Type of pro-environmental behavior	Moderate behavior	5.013785	0.04408139	113.73928	0	4.927387	5.100183
22	Rate_Typicality	mm	Type of pro-environmental behavior	Private behavior	5.037237	0.04361511	115.49294	0	4.951753	5.122721
23	Rate_Typicality	mm	Main environmental concern	Global concern	5.054854	0.03942262	128.22217	0	4.977587	5.132121
24	Rate_Typicality	mm	Main environmental concern	Local concern	4.956653	0.04015843	123.42745	0	4.877944	5.035362
25	Rate_Typicality	mm	Argumentation style	NoNo	5.028319	0.03839767	130.95377	0	4.953061	5.103577
26	Rate_Typicality	mm	Argumentation style	YesBut	4.985213	0.04164259	119.71428	0	4.903595	5.066831

Note. The "estimate" represents the Marginal Mean.

Figure G24

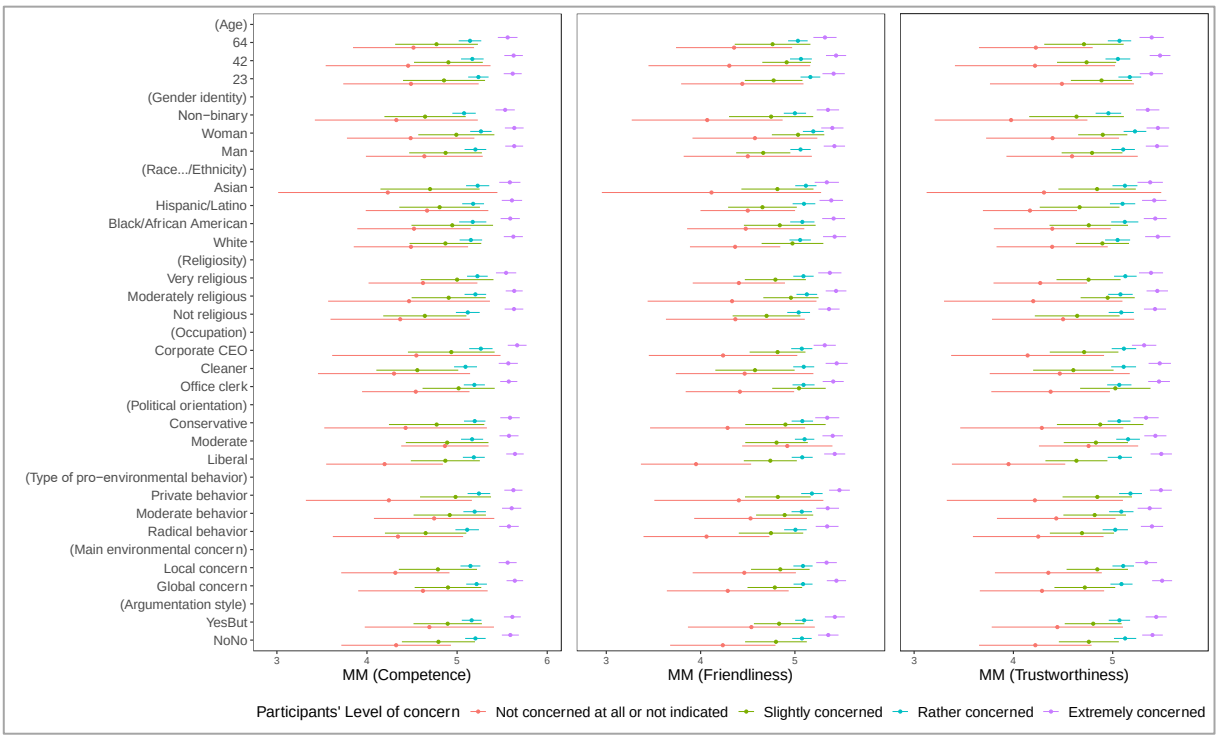
Marginal Mean calculations from R for the profile ratings on the participants' Identification with the profiles

	outcome	statistic	feature	level	estimate	std.error	z	p	lower	upper
1	Rate_Identification	mm	Age	23	4.631841	0.05345452	86.65013	0	4.527072	4.736610
2	Rate_Identification	mm	Age	42	4.599349	0.05252847	87.55916	0	4.496395	4.702302
3	Rate_Identification	mm	Age	64	4.602369	0.05088231	90.45125	0	4.502641	4.702096
4	Rate_Identification	mm	Gender identity	Man	4.623549	0.05212148	88.70717	0	4.521393	4.725705
5	Rate_Identification	mm	Gender identity	Woman	4.686663	0.05057694	92.66403	0	4.587534	4.785792
6	Rate_Identification	mm	Gender identity	Non-binary	4.517735	0.05539170	81.55977	0	4.409169	4.626300
7	Rate_Identification	mm	Race/Ethnicity	White	4.614561	0.05831106	79.13697	0	4.500273	4.728849
8	Rate_Identification	mm	Race/Ethnicity	Black/African American	4.594170	0.05475271	83.90763	0	4.486857	4.701484
9	Rate_Identification	mm	Race/Ethnicity	Hispanic/Latino	4.560232	0.05600355	81.42756	0	4.450467	4.669997
10	Rate_Identification	mm	Race/Ethnicity	Asian	4.678653	0.05528105	84.63395	0	4.570305	4.787002
11	Rate_Identification	mm	Religiosity	Not religious	4.649191	0.05341976	87.03130	0	4.544490	4.753892
12	Rate_Identification	mm	Religiosity	Moderately religious	4.633609	0.04997384	92.72069	0	4.535662	4.731556
13	Rate_Identification	mm	Religiosity	Very religious	4.551211	0.05461439	83.33356	0	4.444169	4.658254
14	Rate_Identification	mm	Occupation	Office clerk	4.588664	0.05235824	87.63977	0	4.486044	4.691285
15	Rate_Identification	mm	Occupation	Cleaner	4.707718	0.05208496	90.38535	0	4.605633	4.809802
16	Rate_Identification	mm	Occupation	Corporate CEO	4.536088	0.05559054	81.59821	0	4.427133	4.645044
17	Rate_Identification	mm	Political orientation	Liberal	4.675794	0.05239250	89.24549	0	4.573107	4.778481
18	Rate_Identification	mm	Political orientation	Moderate	4.626039	0.04989723	92.71133	0	4.528242	4.723836
19	Rate_Identification	mm	Political orientation	Conservative	4.530396	0.05816987	77.88218	0	4.416385	4.644407
20	Rate_Identification	mm	Type of pro-environmental behavior	Radical behavior	4.451366	0.05495934	80.99381	0	4.343648	4.559084
21	Rate_Identification	mm	Type of pro-environmental behavior	Moderate behavior	4.583573	0.05445143	84.17726	0	4.476850	4.690296
22	Rate_Identification	mm	Type of pro-environmental behavior	Private behavior	4.794927	0.05060533	94.75143	0	4.695743	4.894112
23	Rate_Identification	mm	Main environmental concern	Global concern	4.655359	0.04652664	100.05793	0	4.564169	4.746550
24	Rate_Identification	mm	Main environmental concern	Local concern	4.565021	0.04837903	94.35948	0	4.470200	4.659842
25	Rate_Identification	mm	Argumentation style	NoNo	4.593601	0.04875907	94.21018	0	4.498035	4.689167
26	Rate_Identification	mm	Argumentation style	YesBut	4.628835	0.04709940	98.27801	0	4.536522	4.721149

Further plots of subgroup comparisons

Figure G25

Subgroup comparison across all attributes between participants' different levels of concern



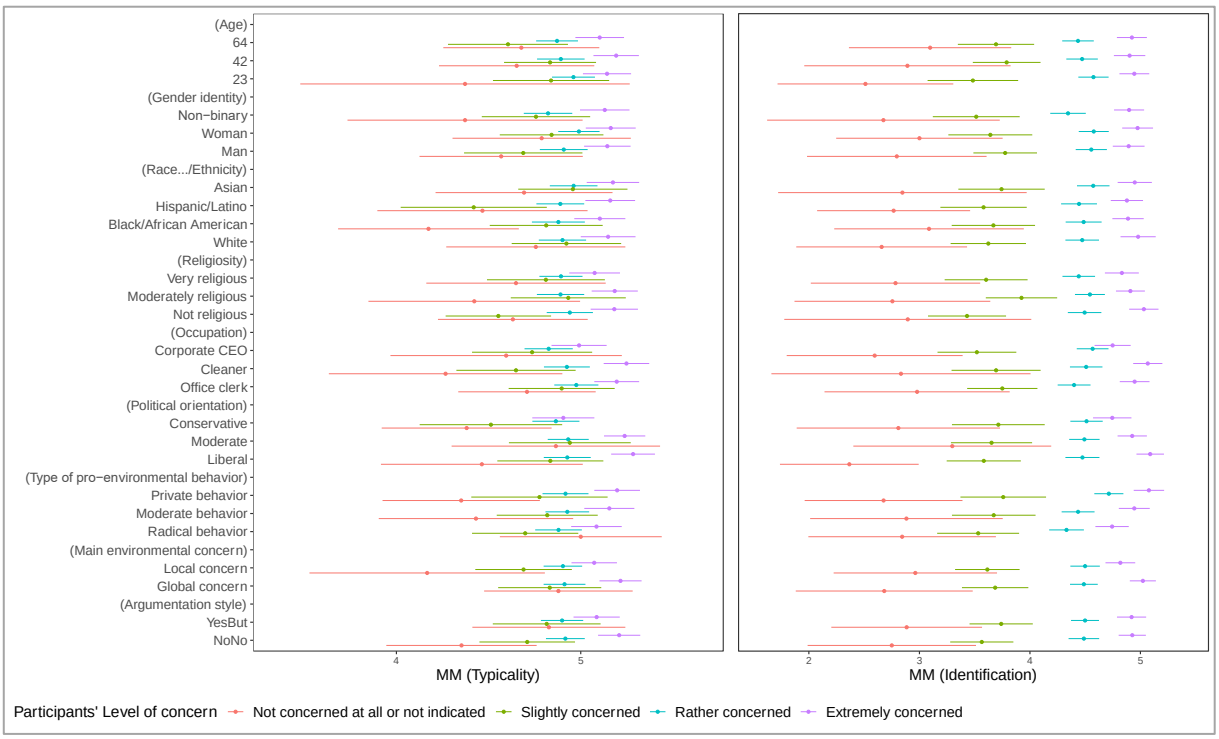


Figure G26

Subgroup comparison matching the profiles' and participants' pro-environmental behaviors

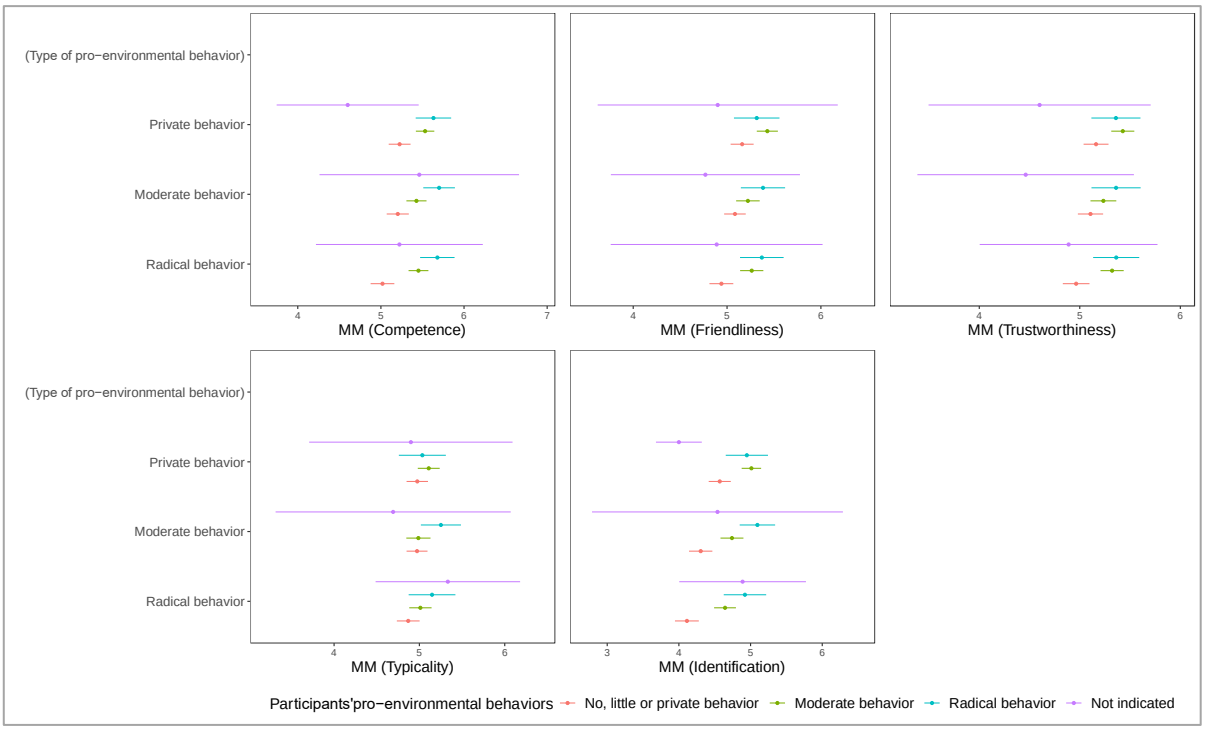


Figure G27

Subgroup comparison matching the profiles' occupation with participants' social class by income

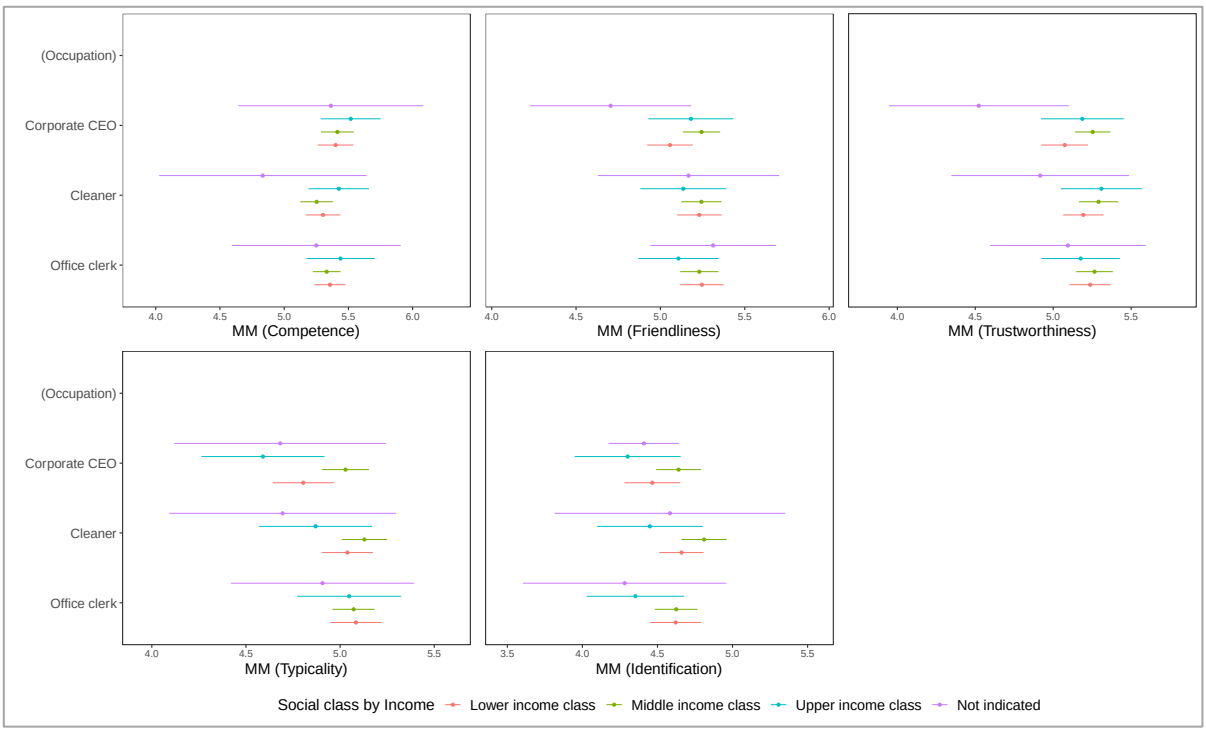


Figure G28

Subgroup comparison across all attributes between participants' different self-assessed social class

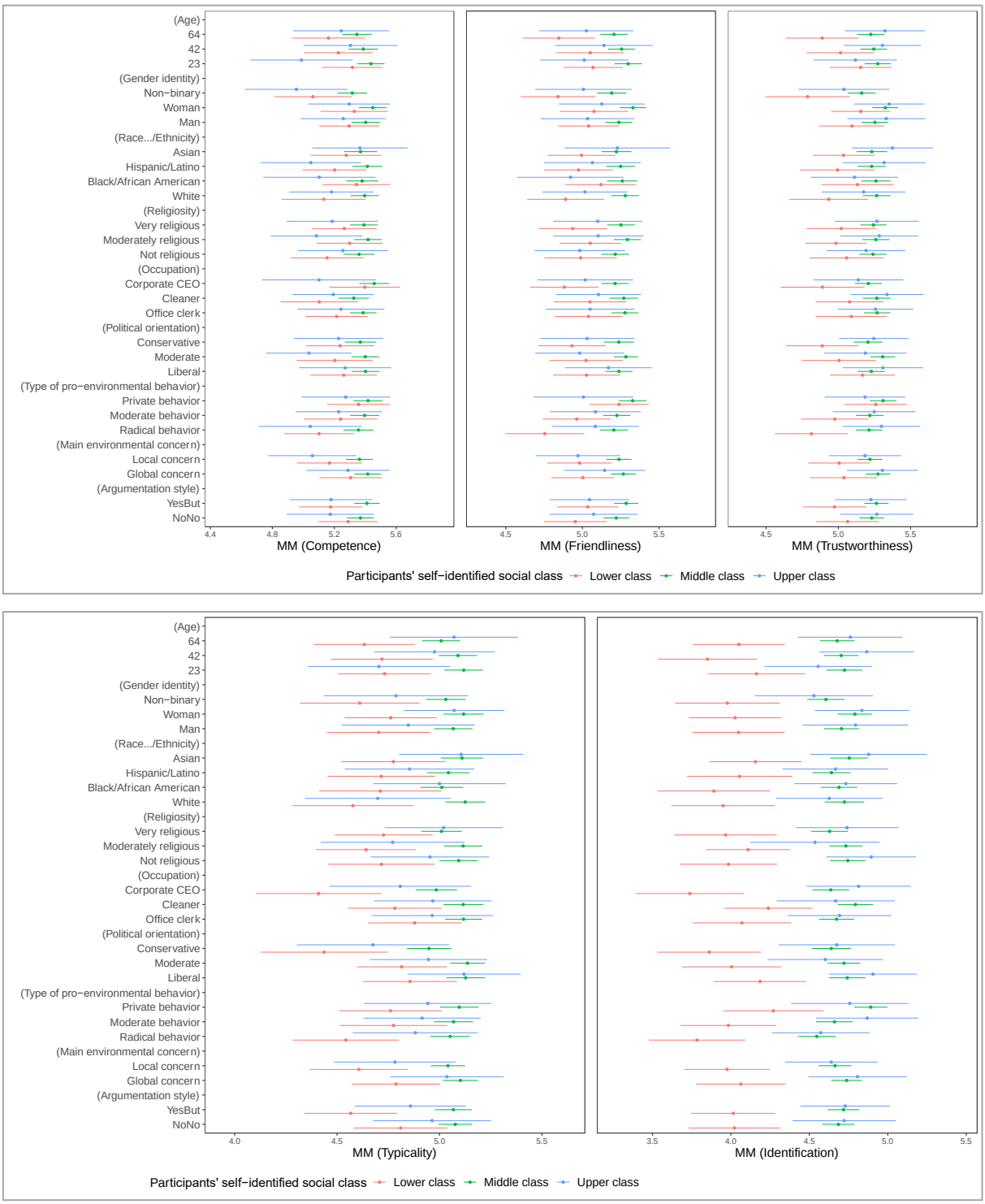
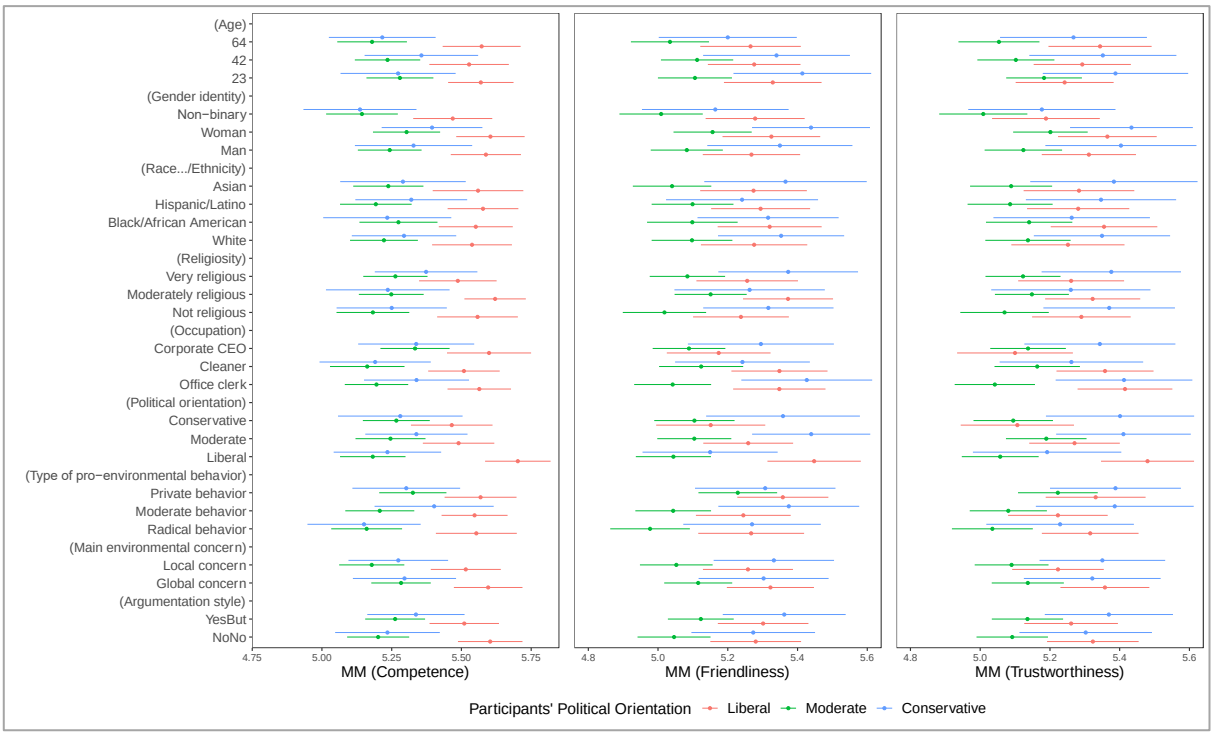


Figure G29

Subgroup comparison across all attributes between participants' different political orientation



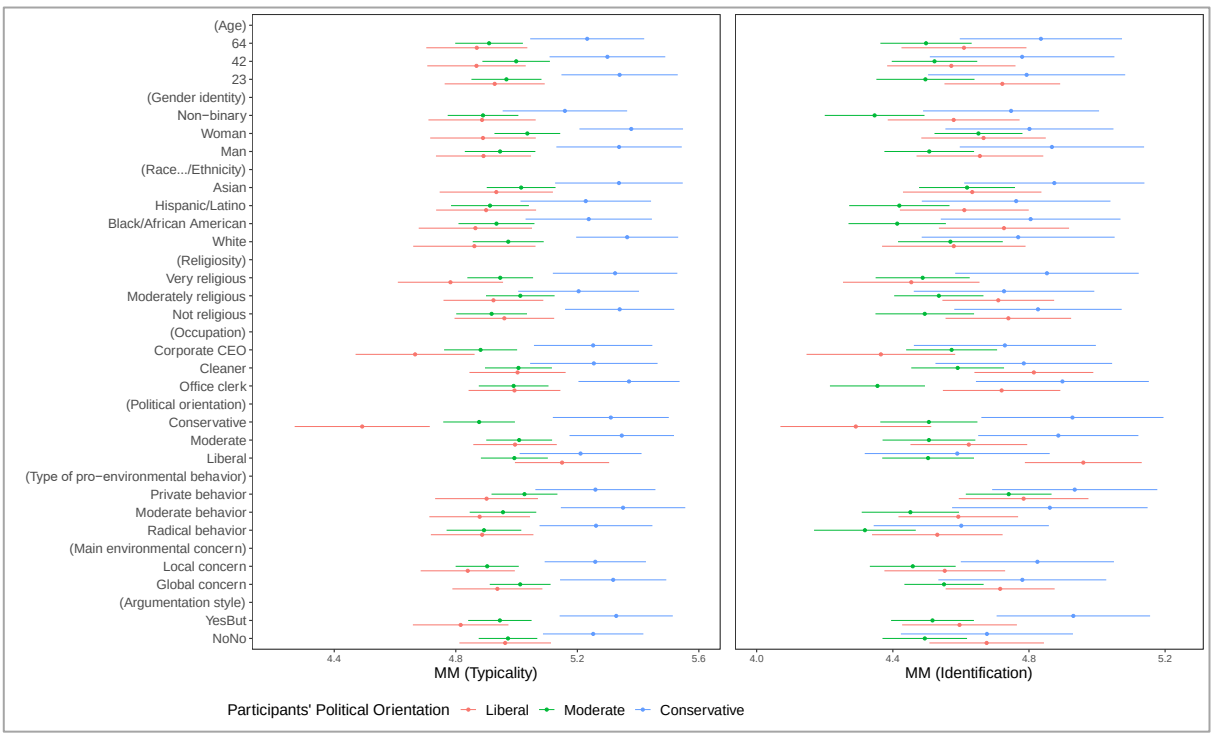
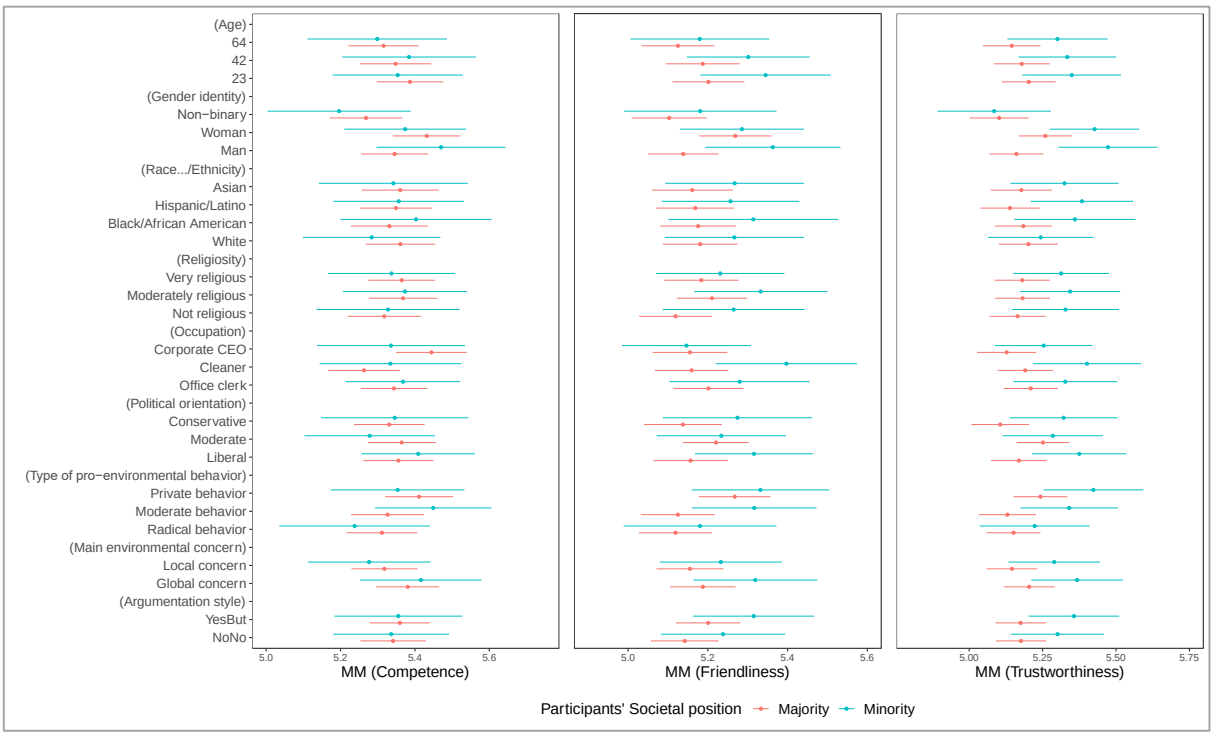


Figure G30

Subgroup comparison across all attributes between participants' memberships in racial-ethnic majority and minority



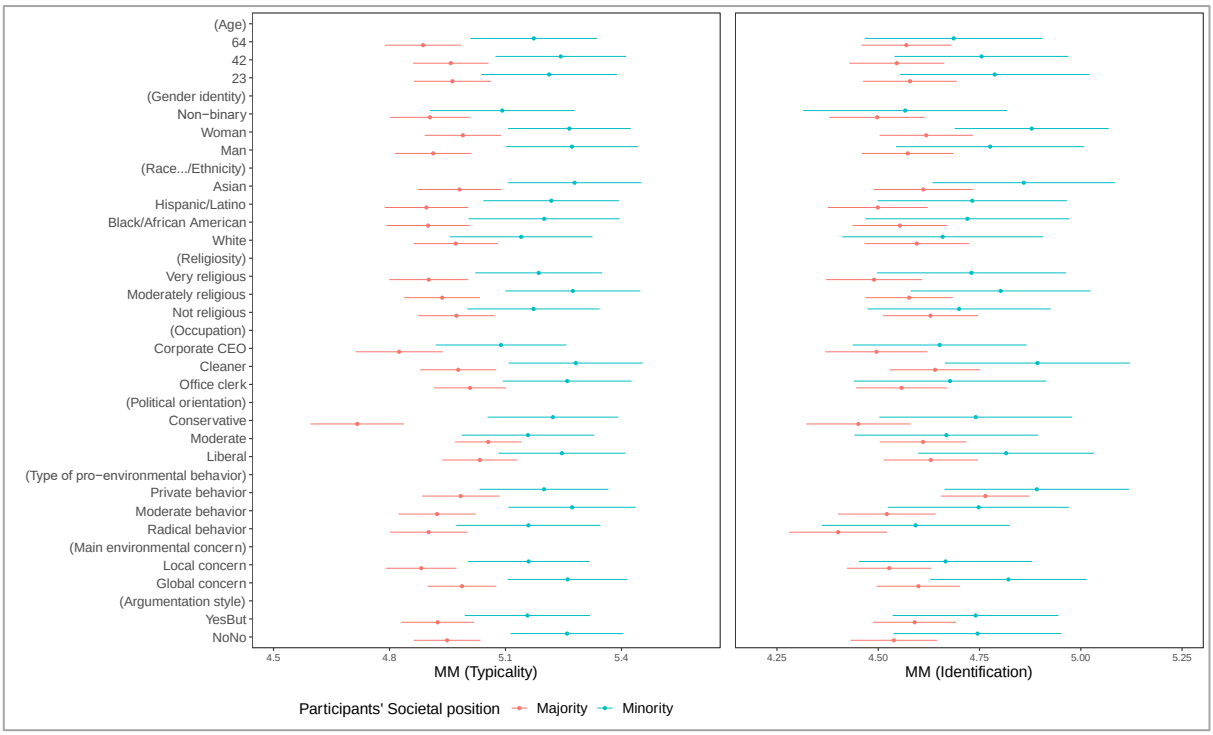


Figure G31

Subgroup comparison matching the profiles' and participants' racial-ethnic group memberships

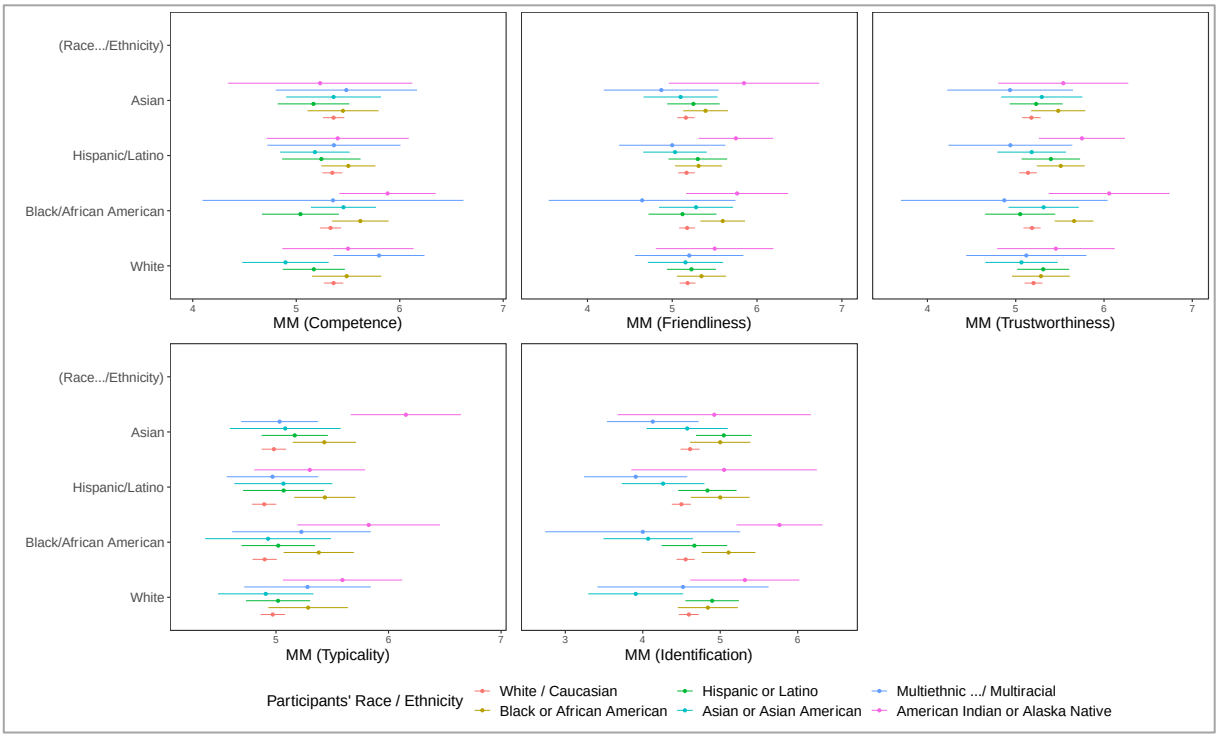


Figure G32

Subgroup comparison matching the profiles' and participants' age

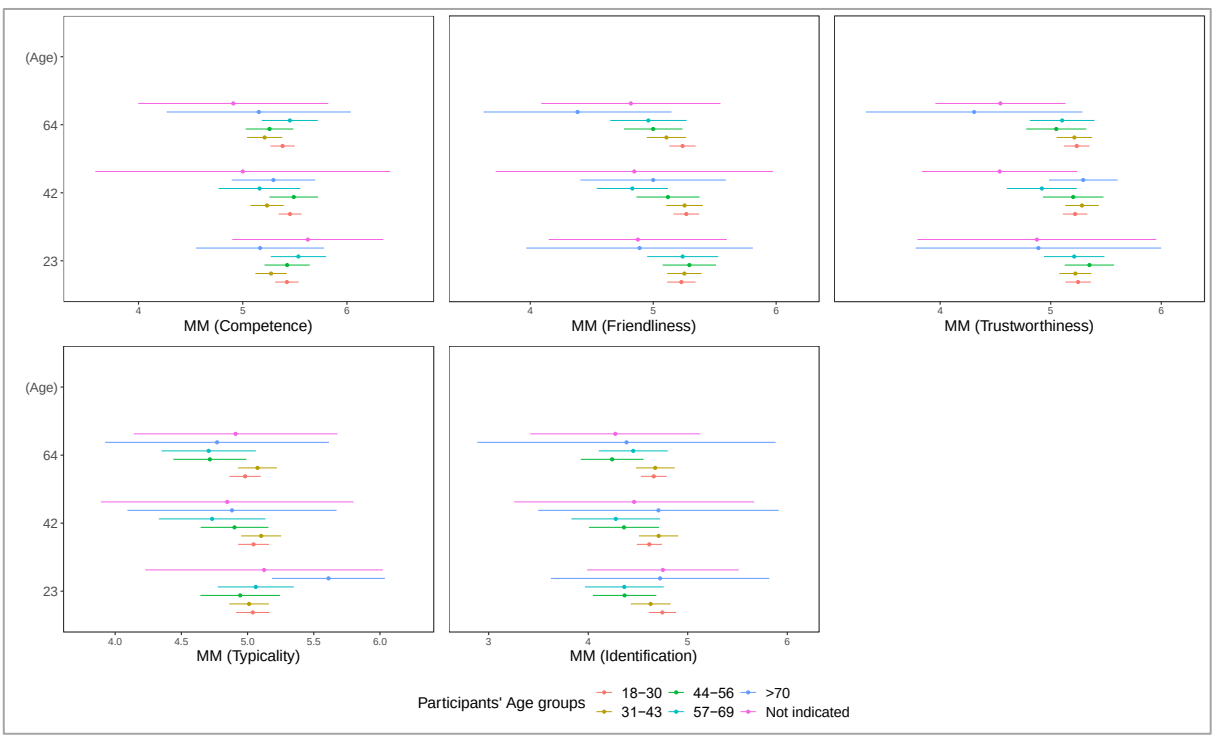


Figure G33

Subgroup comparison matching the profiles' and participants' gender identity

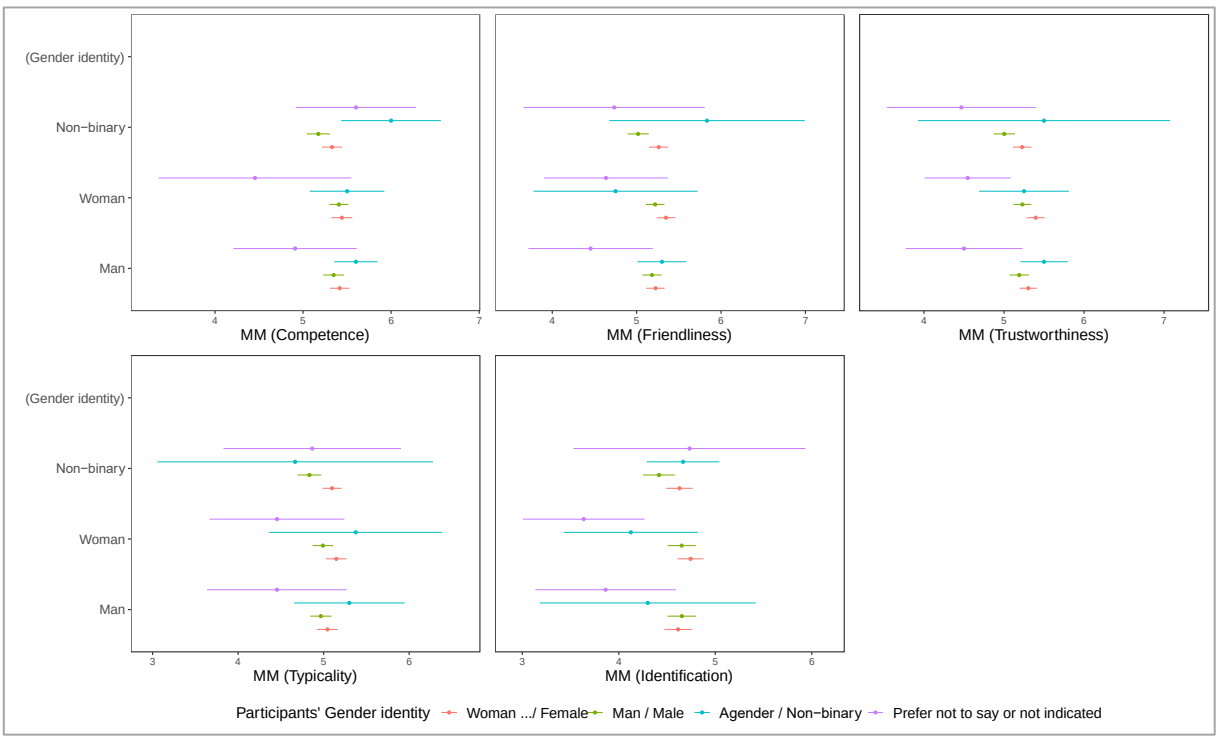


Figure G34

Subgroup comparison matching the profiles' and participants' level of religiosity